

2016-2607, -2650

**United States Court of Appeals
for the Federal Circuit**

PRESIDIO COMPONENTS, INC.,

Plaintiff-Cross-Appellant,

v.

AMERICAN TECHNICAL CERAMICS CORP.,

Defendant-Appellant.

*Appeals from the United States District Court for the Southern District of
California in No. 3:14-cv-02061-HBGS, Judge Marilyn L. Huff.*

**BRIEF FOR DEFENDANT-APPELLANT
AMERICAN TECHNICAL CERAMICS CORP.**

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November 8, 2016

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

Presidio Components, Inc. v. American Technical Ceramics Corp.

Case Nos. 2016-2607, -2650**CERTIFICATE OF INTEREST**

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☐ (petitioner) ☒ (appellant) ☐ (respondent) ☐ (appellee) ☐ (amicus) ☐ (name of party)

Ronald E. Cahill

certifies the following (use "None" if applicable; use extra sheets if necessary):

1. Full Name of Party Represented by me	2. Name of Real Party in interest (Please only include any real party in interest NOT identified in Question 3) represented by me is:	3. Parent corporations and publicly held Companies that own 10 % or more of stock in the party
American Technical Ceramics Corp.	American Technical Ceramics Corp.	AVX Corporation, Kyocera Corporation

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court (**and who have not or will not enter an appearance in this case**) are:

Nutter, McClennen & Fish LLP: Ronald E. Cahill, Alison C. Casey, Andrew R. McArdell, Heather B. Repicky;

Mintz, Levin, Cohn, Glovsky & Popeo P.C.: Marvin S. Gittes, Peter F. Snell, Timur E. Slonim, Howard N. Wisnia; and Gartman Law Group P.C.: John E. Gartman.

November 8, 2016
Date

/s/ Ronald E. Cahill
Signature of counsel

Please Note: All questions must be answered

Ronald E. Cahill
Printed name of counsel

cc:

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STATEMENT OF RELATED CASES

Appellant American Technical Ceramics Corp. (“ATC”) states that on October 21, 2016, this Court stayed, in part, the permanent injunction entered by the district court in this action. The panel was composed of Circuit Judges Dyk, O’Malley, and Wallach. No other appeal in or from the same proceeding in the lower court was previously before this or any other appellate court. However, in *Presidio Components, Inc. v. American Technical Ceramics Corp.*, Nos. 2010-1355, 2011-1089, this Court issued an opinion addressing a prior dispute between the parties concerning the same patent, U.S. Patent No. 6,816,356 (the “356 patent”). That opinion is reported at 702 F.3d 1351 (Fed. Cir. 2012). The panel was composed of Circuit Judges Rader, Plager, and Wallach.

In addition to the proceeding from which this appeal arises, ATC states that the following pending case may be affected by this appeal: *American Technical Ceramics Corp. v. Presidio Components, Inc.*, C.A. No. 2:16-cv-05663-JMA-SIL (E.D.N.Y.).

STATEMENT OF JURISDICTION

Pursuant to 28 U.S.C. § 1295, this Court has jurisdiction over this appeal. The district court had subject matter jurisdiction over the issues that are the subject of this appeal under 28 U.S.C. §§ 1331 and 1338(a). On August 17, 2016, the Court issued its memorandum and order on ATC’s post-trial motions for relief under

Federal Rules of Civil Procedure 50(b) and 59. ATC timely filed a notice of appeal from that final order on September 1, 2016.

STATEMENT OF THE ISSUES

ATC requests that this Court address three issues: the indefiniteness of the asserted claims of the '356 patent in light of the Supreme Court's holding in *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120 (2014); the award of lost profits in connection with sales of ATC's 550 series of capacitors; and the propriety of the district court's entry of an injunction against the 550 series. These issues present the following independent questions:

1. Whether the asserted claims inform a person of ordinary skill in the art ("POSITA") about the scope of the invention with reasonable certainty where there is no dispute that the intrinsic evidence fails to disclose any approach or standard for determining whether the claimed fringe-effect capacitance is present?
2. Whether the patentee can rescue its patent from invalidation under 35 U.S.C. § 112 where:
 - a. The patentee's expert invented—some 13 years after the patent's filing and for purposes of this particular case—a completely novel and complex series of experiments that he then combined and interpreted to determine whether the claimed fringe-effect capacitance is present; and

- b. The approach invented by the patentee's expert relies solely on his subjective interpretation of his experimental results without reference to any standard or guidance?
3. Whether a district court can defer to the uncorroborated opinion of the patentee's expert to conclude what the intrinsic evidence conveys with reasonable certainty to a POSITA about the scope of the claims?
4. Whether a patentee—faced with actual sales (88,000 units) of a non-infringing alternative—can properly satisfy the “but for” test for lost profits and carry its burden to prove that such alternative is not “acceptable” when (a) it failed to offer any evidence of behavior in a hypothetical market absent infringement and (b) the undisputed facts demonstrate that the alternative product costs less and would have been consumers' next-best alternative?
5. Whether a permanent injunction can properly be granted when there is no causal nexus between the claimed fringe-effect capacitance and consumer demand for the infringing product?

STATEMENT OF THE CASE

In *Presidio Components, Inc. v. American Technical Ceramics Corp.*, 702 F.3d 1351 (Fed. Cir. 2012), this Court addressed claims by Presidio Components, Inc. (“Presidio”) that an ATC product known as the 545L capacitor infringed the '356 patent. Appx5369-5381. The present appeal is not the last appeal revisited;

both the facts and the law are new. This case stems from Presidio’s assertion of the ’356 patent’s recently-amended claims against materially different products—ATC’s 550 series capacitors. Moreover, in 2014 the Supreme Court altered the legal landscape on indefiniteness, imposing a new and stricter standard under 35 U.S.C. § 112. ATC now appeals the district court’s holding that the asserted claims of the ’356 patent are definite. It also appeals the court’s affirmance of the jury’s award of lost profits and the entry of a permanent injunction.

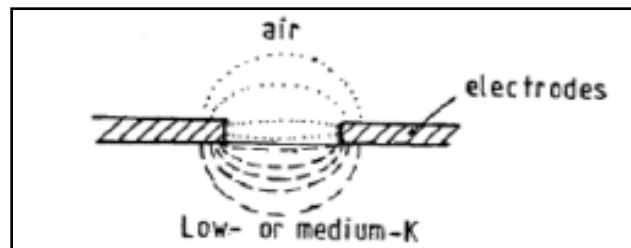
I. BACKGROUND TECHNOLOGY OF MULTILAYER CAPACITORS

Capacitors are passive electronic components that store and release energy. Appx32. They are used in a wide variety of applications ranging from consumer electronics (e.g., cellular phones) to space and military products. Appx5373. A conventional capacitor is composed of two metal plates separated by a non-conductive material known as “dielectric,” such as ceramic or air. Appx32. “When a capacitor is connected to a power source, electricity passes through the metal plates, but not the dielectric, causing a positive charge to accumulate on one plate and a negative charge on the other.” *Id.* The resulting energy is stored in the dielectric between the plates and can be released. “The amount of energy the capacitor can store is its ‘capacitance.’” *Id.*

Multiple capacitors can be combined to create a “multilayer capacitor.” Multilayer capacitors include many layers (typically hundreds) of conductive and

non-conductive material stacked together. Appx32, Appx948-950. Each layer in the multilayer capacitor has its own electrical properties, including capacitance, which affect the overall performance of the device. *See, e.g.*, Appx32.

Relevant to the issues on appeal, the district court found, and the parties agree, that when the external contacts or electrodes of a multilayer capacitor are positioned in an edge-to-edge relationship they always form “fringe-effect” capacitance. *See, e.g.*, Appx38-39. The illustration below is instructive.



Appx5224. The dashed lines represent curving electric field lines and denote this fringe-effect capacitance. *E.g.*, Appx841-843. Although some amount of fringe-effect capacitance is always present, no industry publications—existing either in 2002 (when the patent-in-suit was filed) or today—describe any methods for isolating or measuring the fringe-effect capacitance between the external contacts of a multilayer capacitor. Appx964, Appx991, Appx1011. All known techniques for measuring a capacitor’s performance reflect only the total capacitance or overall performance of the entire capacitor, including all of its various layers. *See* Appx970-

971, Appx995; *accord* Appx1246-1247,¹ Appx1261-1262, Appx1350-1351, Appx1355-1356 (referencing Appx4578).

II. THE PATENT-IN-SUIT

Presidio asserts claims 1, 3, 5, 16, 18, and 19 of the '356 patent, entitled “Integrated Broadband Ceramic Capacitor Array.” *See* Appx295, Appx337-360. As its name suggests, the patent relates to a multilayer ceramic capacitor for use in broadband applications. Claim 1, the only asserted independent claim, recites:

A capacitor comprising:

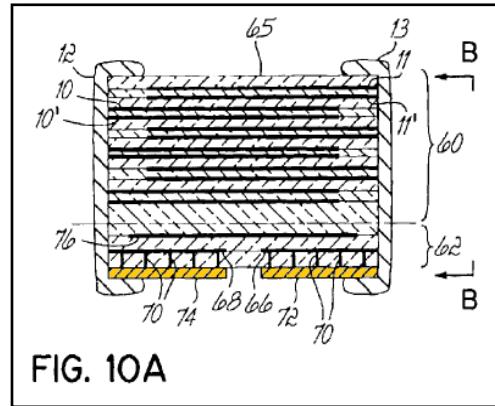
- a substantially monolithic dielectric body;
- a conductive first plate disposed within the dielectric body;
- a conductive second plate disposed within the dielectric body and forming a capacitor with the first plate;
- a conductive first contact disposed externally on the dielectric body and electrically connected to the first plate; and
- a conductive second contact disposed externally on the dielectric body and electrically connected to the second plate, and **the second contact being located sufficiently close to the first contact in an edge to edge relationship in such proximity as to form a first fringe-effect capacitance with the first contact that is capable of being determined by measurement in terms of a standard unit.**

Appx360 ('356 patent, 1:22-36) (last element in bold; italics showing language

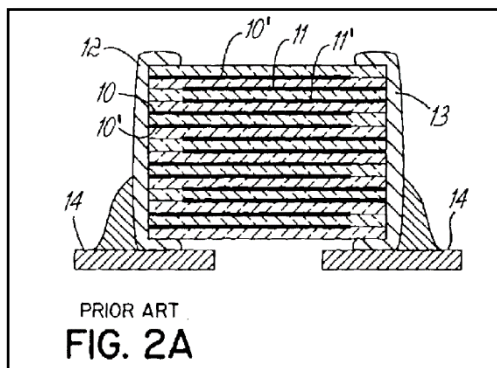
Presidio added during the recent reexamination discussed *infra*).

¹ Keysight Technologies, Inc. is the world's leading manufacturer of electronic test instruments. It provided testimony from its corporate representative in response to a subpoena from ATC. *See, e.g.*, Appx1233-1238.

The last element of claim 1 represents the asserted novelty of the invention.² As explained in the specification (and illustrated further in Figure 10A—right), “in this device, the external conductive plates 72 and 74 [highlighted] . . . have been extended toward



each other so as to create a capacitance between 72 and 74 based upon fringe electric field extending to and from the adjacent edges of those plates.” Appx340, Appx348 (’356 patent, 7:21-26, 7:46-56). In other words, notwithstanding that there is always some amount of fringe-effect capacitance in every capacitor, the asserted invention is a multilayer capacitor having external contacts located “sufficiently close . . . to form . . . fringe-effect capacitance . . . that is capable of being determined by measurement.” Appx360.



The patent-in-suit’s reference to “Prior Art” Figure 2A (left) further confirms the alleged novelty of the claimed invention. Appx338. Figure 2A satisfies all of the requirements of claim 1 except for the last

² Claims 3, 5, 16, 18, and 19 of the ’356 patent all depend from claim 1 and thus also contain the claim limitation at issue. Appx351.

limitation. Appx937-941. For example, it includes a dielectric body having electrode plates 10 and 11 and external contacts 12 and 13. *Id.* The only difference between the prior art and claim 1 is that the external contacts in the prior art are *not* “sufficiently close” to form the claimed fringe-effect capacitance. *Id.*

A. The Claims of the ’356 Patent Were Recently Amended.

The language now contained in the last element of claim 1 is the result of Presidio’s amendment of the ’356 patent during recent proceedings before the United States Patent and Trademark Office (“PTO”). Appx360.

After Presidio filed the present lawsuit, ATC requested reexamination of the patent-in-suit. Appx3021-3120. In making that request, ATC relied on the testimony proffered by Presidio’s expert, Dr. Wayne Huebner, in *Presidio Components, Inc. v. American Technical Ceramics Corp.*, C.A. No. 3:08-CV-00335-IEG-NLS (“*Presidio I*”). Appx5328. There, Presidio argued (and the jury found) that ATC’s 545L capacitor infringed the last element of claim 1 based on observing micrographs (i.e., photographs taken under a microscope), determining the capacitor’s dimensions (e.g., thickness, gap, etc.), and then calculating the fringe-effect capacitance theoretically. Appx5353-5354. The PTO agreed with ATC that, upon application of Dr. Huebner’s trial testimony in *Presidio I* to the prior art, the original claims of the ’356 patent were invalid.

The basis for the PTO's conclusion was a catalog published by ATC's corporate parent ("the AVX catalog"), which constituted prior art and disclosed all the elements of, among others, claim 1. Appx2779; *see also* Appx2759-2804. More specifically, the PTO found that the AVX catalog contained a multilayer capacitor having fringe-effect capacitance that could be theoretically determined using the same approach that Presidio employed in *Presidio I*. Appx2768, Appx2784-2785, Appx3102-3108. The fringe-effect capacitance in the prior art was determinable by theoretical calculation using the capacitor's dimensions: "the formula applied . . . is indeed applicable to the device disclosed in the AVX MLC Catalog." Appx2770.

To overcome this prior art, Presidio was forced to narrow the claims. Following a second in-person interview, the PTO identified the need for Presidio to amend the original claims to "distinguish[] between 'derivable', 'calculatable' [sic] and 'measurable'" ways to ascertain fringe-effect capacitance because the final rejection was being maintained. Appx2665-2668. In response, Presidio made the following narrowing amendment to claim 1:

the second contact being located sufficiently close to the first contact in *an edge to edge relationship in such proximity as to form a first fringe-effect capacitance with the first contact that is capable of being determined by measurement in terms of a standard unit.*

Appx2643-2661 at Appx2644, Appx2657. This addition purportedly served to distinguish the amended claims from the AVX catalog, which did not provide a physical capacitor that could be measured by instruments. Presidio argued that the

amendment “reflect[s] that the meaning of ‘determinable’ [fringe-effect capacitance] includes *only what is practically measurable*, not merely what is theoretical or simulated.” Appx2659 (emphasis added). As a result, the claimed fringe-effect capacitance is limited to that which is “capable of being determined by measurement in terms of a standard unit.”

A reexamination certificate issued on December 8, 2015. Appx259-360. The district court held that the claim amendment was narrowing and that absolute intervening rights applied. Appx135-146.

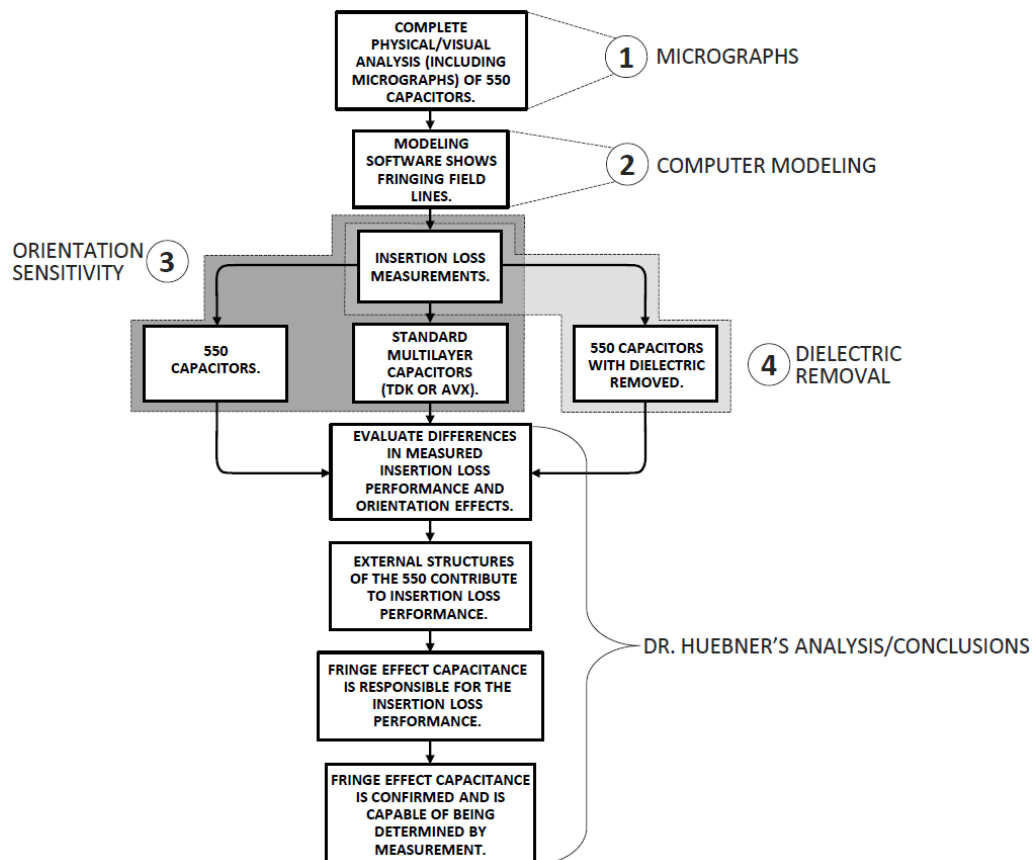
B. The Patent Provides No Disclosure Regarding Fringe-Effect Capacitance that Can Be Determined by Measurement.

Notwithstanding the claims’ asserted point of novelty, the patent-in-suit does not disclose how to determine when the external contacts become “sufficiently close” so that fringe-effect capacitance becomes not merely theoretical, but “practically measurable.” Appx991, Appx1032 (“[I]t doesn’t include the test.”). The inventors could not have included such a disclosure in the patent, because they admit that—even to this day—they have never tried to isolate or measure fringe-effect capacitance. Appx514. As a result, the patent provides only a single example of what might be “sufficiently close”: external contacts separated by a distance of “.002 of an inch” or 2 mils. Appx349 (’356 patent, 9:64-10:10). Standing alone, this example provides no guidance regarding how this distance (or any other) gives

rise to the claimed fringe-effect capacitance. Appx966; *accord* Appx168-170, Appx2776-2777.

III. PRESIDIO'S NEW THEORIES OF CLAIM SCOPE

Because there is no guidance in the patent, Presidio's expert Dr. Huebner "invented" a new, complex series of experiments to determine the presence or absence of the last limitation in claim 1. Appx985-986, Appx945-947, Appx969 (testifying he was "performing research for the first time"). He summarized his new experiments—developed solely for purposes of this litigation—using a demonstrative flowchart, which is reproduced below with annotations. Appx1930. *See also* Appx964-965, Appx990-993, Appx1011-1014.



Appx1930 (annotated and formatted). As illustrated in the flowchart, Dr. Huebner's test consisted of four separate experiments: (1) reviewing micrographs, (2) reviewing computer modeling, (3) performing an "orientation sensitivity" experiment, and (4) performing a "dielectric removal" experiment. Appx964-990. Dr. Huebner admitted that none of these experiments alone can determine whether a capacitor practices the '356 patent. Appx990-993 (none of the experiments prove infringement); Appx965-966 (micrographs insufficient); Appx893, Appx966-967 (computer modeling insufficient); Appx988-989 (orientation sensitivity experiment insufficient); Appx981-982 (dielectric removal experiment insufficient). Nonetheless, Dr. Huebner testified that, with his more than "35 years of experience" he could devise these experiments and then combine and interpret the data from them to conclude whether a capacitor falls within or outside the scope of the claims. Appx990-993, Appx1009-1013.³

As a threshold matter, at the time of the invention, "[t]he ordinary artisan would hold a Masters or similar degree, or the experiential equivalent thereof, in Electrical Engineering or a similar field, and would have at least two years of industry experience in designing multilayer capacitors." Appx36, Appx5332. The parties agree that a POSITA would know that fringe-effect capacitance cannot be

³ The district court allowed Dr. Huebner to testify and offer his opinion on infringement over ATC's objection. *See* Appx176-182, Appx220-221.

isolated or measured directly using a capacitance meter or any other known instrument. Appx995-996 (“It is impossible to measure directly the [fringe-effect] capacitance”); *accord* Appx1348-1357, Appx1246-1247, Appx1261-1262. Dr. Huebner, therefore, was left to hatch his own method for ascertaining the scope of the claim. He testified that it would have taken “six months or a year” for persons “well above” the level of skill of a POSITA (like himself) to figure out how to use the experiments he invented to arrive at a conclusion. Appx1011-1013, Appx1003.

The first component of Dr. Huebner’s four-part test involved viewing micrographs of the capacitor. Appx965-966. Micrographs show the various layers of conductive plates and dielectric within the device. Appx858-859, Appx1878-1923. They also show the external contacts and the distance between them. Appx965-966, Appx1878-1923. It is undisputed, however, that they do not show capacitance. Dr. Huebner could not have been more clear that his inspection of micrographs could not demonstrate whether capacitors practice the last element of claim 1. Appx965-966.

Second, Dr. Huebner created computer simulations to determine whether the capacitors had “significant arcing field lines external to the external contacts.” Appx891, Appx1871-1874; *see also* Appx843 (“I was interested in the magnitude, how extensive, how far from the surface was the arcing, what was the magnitude of the field”). But because all multilayer capacitors have fringing field lines

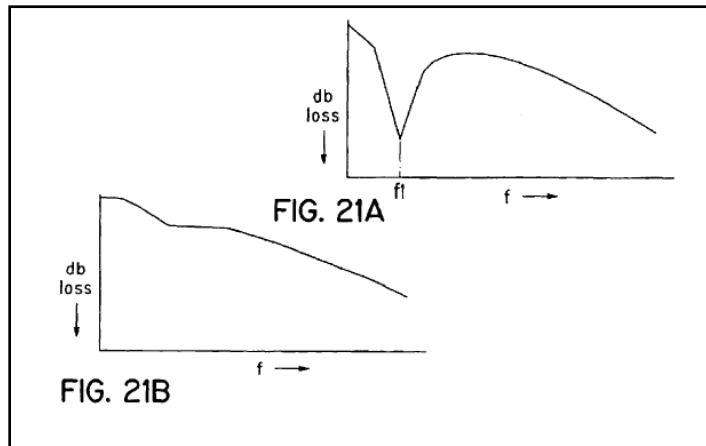
between their external contacts, a POSITA cannot conclude from a computer simulation alone whether or not a capacitor practices the '356 patent. Appx1008-1009. For example, computer simulations of prior art capacitors also display curving field lines between their external contacts. Appx1366-1370 (showing that non-practicing and prior art capacitors also have arcing field lines between their external contacts), Appx4579, Appx4580.

The third component of Dr. Huebner's testing was his "orientation sensitivity" experiment. This experiment consisted of comparing the performance of the capacitor at four different orientations. Appx983-986; *see, e.g.*, Appx1927.

To test performance, Dr. Huebner used a network analyzer to gather insertion loss data. Insertion loss testing, however, does not measure capacitance. Appx990, Appx1142, Appx1410, Appx1149-1151. It shows, over a range of frequencies, the loss of power that results when a device is placed into a circuit. Appx1243-1247, Appx1149-1151. That is, the network analyzer measures the ratio of the device's output power to its input power without regard to what the tested device is. *Id.*; Appx972; *accord* Appx1355-1356 (referring to Appx4578), Appx1140-1142, Appx1151-1153 (referring to Appx4581). As a result, when the device under test is a multilayer capacitor, the network analyzer cannot determine capacitance. It also cannot isolate the amount of insertion loss, if any, that is attributable to any particular layer of the multilayer capacitor; it measures the insertion loss of the multilayer

capacitor as a whole. Appx990; *accord* Appx1151-1153, Appx1243-1247, Appx1355-1356.

Figures 21A and 21B of the patent (below) illustrate insertion loss plots for multilayer capacitors. Appx343. These graphs show a single data point for insertion

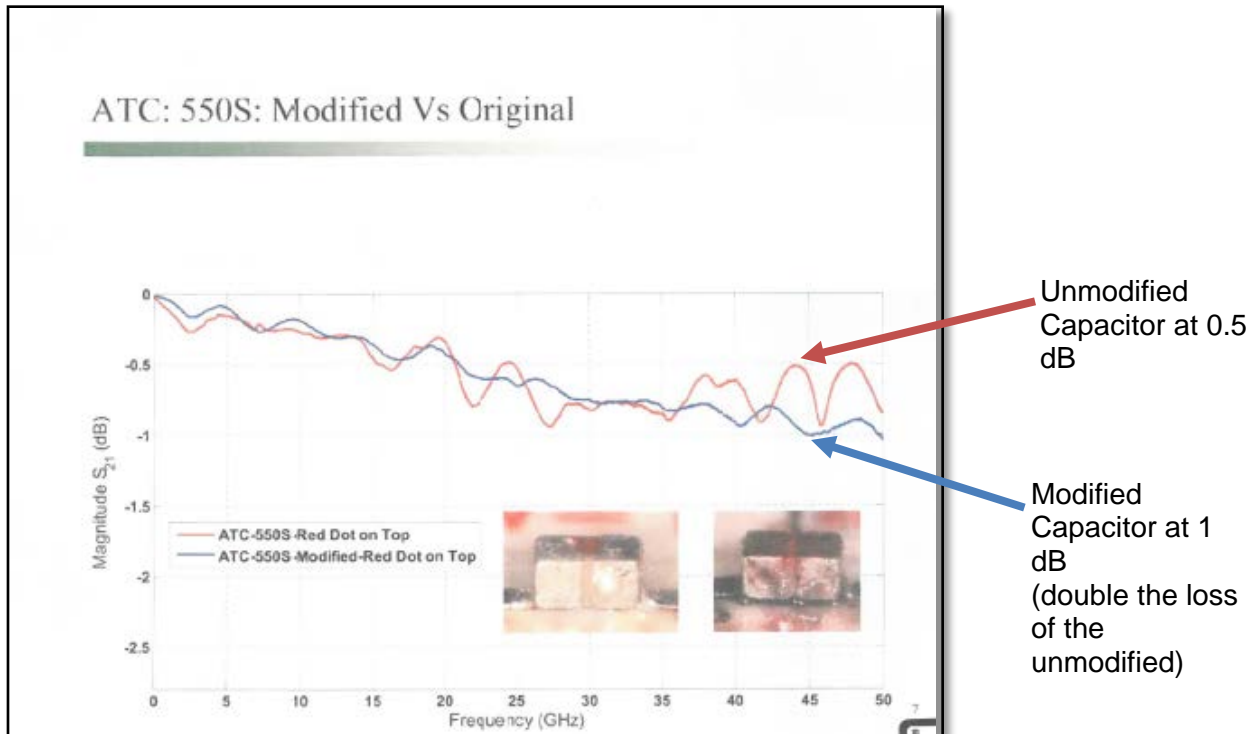


loss that results from the entire multilayer capacitor (y axis) across a range of frequencies (x axis). Appx1014-1015. As Dr. Huebner admitted, these insertion loss graphs are not

related to fringe-effect capacitance. Appx1023-1032. In fact, these figures correspond to multilayer capacitors, shown in Figures 8A and 9A, that do not practice the invention. *Id.* Even more broadly, Dr. Huebner acknowledged that there is no insertion loss testing that can identify fringe-effect capacitance between external contacts. Appx990, Appx971-972, Appx1009-1010, Appx1024. He further conceded that the multiple insertion loss measurements from his orientation-sensitivity experiment could not independently determine whether a capacitor contained fringe-effect capacitance capable of being determined by measurement. Appx984-989.

The fourth component of Dr. Huebner's test was his "dielectric removal" experiment. There, he had the accused capacitors sandblasted to remove portions of the dielectric from inside the body of the capacitor. He then tested the insertion loss of the modified capacitors. *See, e.g.*, Appx967-983, Appx1928. He testified that this experiment would help him determine if the performance of the capacitor arose from internal features of the capacitor or its external contacts. Appx896-897. However, he acknowledged that this experiment could not independently determine whether a capacitor contained the required fringe-effect capacitance. Appx982.

Dr. Huebner next compared and interpreted the insertion loss data from his "orientation sensitivity" and "dielectric removal" experiments. Appx1009-1013; Appx1930 ("Evaluate Differences In Measured Insertion Loss Performance And Orientation Effects"). After reviewing comparison graphs, like the one reproduced below, he concluded that the modified and unmodified capacitors "behave similarly" Appx901.



Appx1876 (annotated). There are, however, no established criteria that define what this means. Appx1361-1364. To the contrary, “[d]ifferent engineers could come to different conclusions when looking at the same data” *Id.* For example, as illustrated above, while Dr. Huebner characterized his test data as showing “similar behavior,” the test data actually show that at the highest frequencies the modified capacitor (blue line) had nearly twice as much insertion loss than the unmodified capacitor (red line)—meaning that the modified capacitor performed much worse.

In the end, Dr. Huebner concluded that when all of the components of his test were combined and interpreted, the performance of the accused capacitors was more likely than not attributable to fringe-effect capacitance between the external contacts. Thus, he concluded, the external contacts were “sufficiently close” to form

a fringe-effect capacitance “that is capable of being determined by measurement in terms of a standard unit.” Appx918-920, Appx1930 (“Fringe Effect Capacitance Is Responsible For The Insertion Loss Performance”).

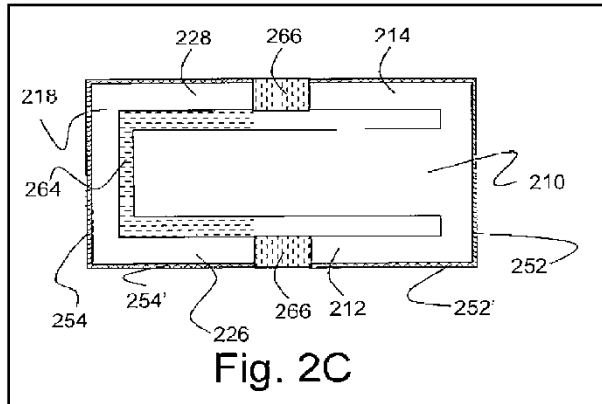
Dr. Huebner’s combination and interpretation, however, is known only to Dr. Huebner. The ’356 patent does not disclose any objective criteria for evaluating or combining the results from multiple experiments to determine whether or not a capacitor practices the last limitation in claim 1. Appx990-993. Nor could Dr. Huebner identify any evidence showing that a POSITA would have known how to derive, use, and combine his four experiments in 2002. *Id.*, Appx1010-1013. He simply concluded that a POSITA would “know” it or could “figure it out.” Appx1010-1013, Appx1032.

IV. THE ACCUSED PRODUCTS

In the present litigation, Dr. Huebner applied his new test regime to accuse ATC’s 550 series capacitors—the 550L, 550S, 550U, and 550Z capacitors—of infringement. Appx918-920, Appx1931-1938.

The 550 series capacitors have a unique internal electrode design that gives rise to multiple internal capacitances unrelated to the fringe-effect capacitance of claim 1. Appx1159-1163, Appx1426-1428, Appx978-981. In particular, the 550 capacitors have electrodes that are formed in “dagger” and “C” shapes. Appx1417-1420, Appx1422-1423. The parties agree that these unique shapes can be described

by reference to U.S. Patent No. 8,446,705 (“the ‘705 patent”), owned by ATC’s corporate parent. Appx1974; *see also* Appx978-981, Appx1159-1165, Appx1945-1946, Appx1949-1950, Appx1960-1961, Appx1971-1972.



In addition to a primary capacitance that is generated between stacked layers of internal electrodes, the ‘705 patent discusses—and the 550 series capacitors include—secondary and tertiary capacitances between

certain electrode features. Appx1978, Appx1991 (‘705 patent, 7:4-10), Appx1992 (*id.*, 10:42-11:28). These secondary (264) and tertiary (266) capacitances, shown in FIG. 2C (above), are designed to improve the capacitor’s ultra-broadband performance. Appx1761-1762. Dr. Huebner agreed that the electrodes of ATC’s 550 series capacitors are uniquely shaped, are described in the ‘705 patent, and at least help to give the 550 capacitors their high frequency performance. Appx978-981, Appx1017.

V. PRESIDIO’S BB CAPACITORS DO NOT PRACTICE THE ‘356 PATENT

Presidio asserts that its Buried Broadband (“BB”) capacitors compete in the ultra-broadband capacitor marketplace with ATC’s 550 series capacitors. Appx499, Appx511-512, Appx557, Appx610. Consumers in this marketplace “are looking for

a low insertion loss capacitor that works over a broad frequency range.” Appx533; *see also* Appx527, Appx530-534. This desirable performance can be achieved without the claimed invention. *See, e.g.*, Appx347 (’356 patent, 5:36-39, 6:48-54) (discussing that low insertion loss at both low and high frequencies can be provided solely by internal electrodes), Appx534, Appx609, Appx618 (noting no consumer demand for fringe-effect capacitance).

Presidio’s President, a co-inventor on the patent, testified that the BB capacitors have “very good” broadband performance, and he was “certain that fringe effect capacitance between external contacts [was] not one of the features of the BB capacitors.” Appx512-514; *see also* Appx605-607. In fact, Presidio admitted that its BB capacitors do not practice claim 1 of the ’356 patent. Appx607-608. Another co-inventor, Presidio’s Product Manager and Chief Financial Officer, confirmed that the BB capacitors have high performance similar to that of ATC’s 550 capacitor. Appx608-610. He further agreed that it is the BB’s internal geometry—not any fringe-effect capacitance between external contacts—that gives rise to its performance characteristics. Appx609.

VI. ATC’S 560 CAPACITOR

In addition to the 550 series capacitors, ATC sells a 560 capacitor. Appx1285, Appx1287, Appx4569 (showing sales of 88,000 units). This capacitor, too, is an ultra-broadband multilayer capacitor that has a low insertion loss across a broad

range of frequencies. Appx2555-2556; *see also* Appx735-736, Appx747. It performs almost as well as the corresponding 550 capacitor and better than the corresponding BB capacitor. For example, at 40 gigahertz (GHz),⁴ the 550 capacitor has an insertion loss of approximately 0.4 dB, the 560 capacitor has an insertion loss of less than 0.6 dB, and the Presidio BB capacitor has an insertion loss of approximately 0.9 dB. Appx1935, Appx2555, Appx2386; *see also* Appx1258.

It is uncontested that, during the relevant damages period considered by the jury, ATC sold 88,000 units of the 560 capacitor. Appx81, Appx4569. The 560 capacitor sells at a lower price than either the ATC 550 or the Presidio BB capacitors. It typically sells for \$0.75. Appx4569. By contrast, the ATC 550 capacitors sold in the range of \$1.03 to \$3.98, Appx4566-4568, and the Presidio BB capacitors sold at an average selling price of \$2.30, Appx1079. The ATC 560 capacitor is thus a higher performance, lower cost alternative to the Presidio BB capacitors.

VII. PROCEEDINGS BELOW

Presidio filed its complaint against ATC for infringement of the '356 patent in the United States District Court for the Southern District of California on September 2, 2014. Appx303. Following the PTO's issuance of the *ex parte* reexamination certificate for the '356 patent, ATC moved for summary judgment on

⁴ The frequency of interest for ultra-broadband capacitors is 40GHz. *See* Appx1935 (noting "Operating Frequency . . . to 40 GHz").

its affirmative defense of absolute intervening rights. Appx317-318. On February 10, 2016, the district court granted ATC's motion and held that Presidio is entitled to infringement damages only for the time period after December 8, 2015. Appx34.

In April 2016, the district court held a six day jury trial. Appx34. On April 18, 2016, the jury returned a verdict finding direct and induced infringement of claims 1, 3, 5, 16, 18, and 19 of the '356 patent by ATC's 550 series capacitors. Appx34-35, Appx293-297. The jury awarded Presidio \$2,166,654 in lost profit damages. *Id.* The jury also issued an advisory verdict as to indefiniteness, finding that ATC failed to prove by clear and convincing evidence that claim 1 of the '356 patent is invalid. Appx35, Appx297.

On June 17, 2016, the district court denied ATC's motion for entry of judgment of indefiniteness, concluding "based on the evidence presented at trial, that the intrinsic record of the '356 patent discloses to a PHOSITA how to evaluate whether the fringe-effect capacitance between the external contacts of a capacitor is capable of being determined in terms of a standard unit." Appx41; *see also* Appx25-27. The court did not find that the test for determining whether a capacitor practices the last element in claim 1 is disclosed in the patent or that this claim term had a presumed meaning to a POSITA at the time of the invention. Appx42-43; *see also* Appx1357-1358 (undisputed evidence that this claim term did not have a presumed meaning). Rather, the court held that "Dr. Huebner credibly testified that in light of

the disclosures contained in the intrinsic record of the '356 patent regarding insertion loss measurements, a PHOSITA would be able to determine whether the fringe-effect capacitance between the external contacts of a capacitor is capable of being determined in terms of a standard unit.” Appx41. The court credited Dr. Huebner’s testimony because of his “extensive experience with multilayer ceramic capacitors, including his over 35 years of analyzing, researching, measuring, designing, and building such capacitors.” Appx40.

Subsequently, on August 17, 2016, the district court denied ATC’s motions for judgment as a matter of law and granted Presidio a permanent injunction. Appx28-29, Appx59-107. It found that, based on the testimony of Dr. Huebner, there exists a sufficient causal nexus between infringement and the harm suffered by Presidio. Appx87-89. At the same time, the court affirmed the jury’s lost profits award and held that the “record was sufficient to allow the jury to find that the 560L was not an acceptable non-infringing alternative.” Appx82. Before reaching that conclusion the court noted that 88,000 units of the 560 capacitor were sold to one customer, the 560 capacitor “was not widely advertised or touted,” and Presidio was unaware of the product. Appx81. In addition, the district court compared the 560 capacitor—in terms of both performance and sales—to the accused products, not to Presidio’s BB capacitors. Appx81-82.

SUMMARY OF THE ARGUMENT

In *Nautilus*, the Supreme Court described the “delicate balance” Section 112 requires. 134 S. Ct. at 2128. This balance recognizes “the inherent limitation of language,” while at the same time confirms the statute’s mandate that the patent provide “clear notice.” *Id.* at 2123, 2129. “[A] patent must . . . ‘apprise the public of what is still open to them.’” *Id.* at 2123 (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373 (1996)). Otherwise, “there would be ‘[a] zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims.’” *Id.* at 2129 (quoting *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 236 (1942)). “A person skilled in the art must know not only what falls inside the scope of the claim term, but also what falls outside of it.” *Prolifiq Software Inc. v. Veeva Sys., Inc.*, No. C 13-03644 SI, 2014 WL 3870016, at *6 (N.D. Cal. Aug. 6, 2014). Accordingly, to be definite “the claims, viewed in light of the specification and prosecution history, [must] inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus*, 134 S. Ct. at 2129.

ATC lives in the very zone of uncertainty that *Nautilus* guards against. The intrinsic evidence discloses no means to define the term of degree at the center of the ’356 patent. The district court, nonetheless, allowed Dr. Huebner to invent his own gallimaufry of four distinct science experiments that must be combined and

interpreted—without reference to any objective criteria—to determine whether an accused product falls within or outside the claims. Because there is no disclosure in the patent and no test methodology described in any peer-reviewed scientific or industry publications, Dr. Huebner testified without corroboration that a POSITA would just know what to do. The district court unconditionally accepted that opinion and, in doing so, committed the same error made by the lower courts in *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335 (Fed. Cir. 2015) and *Dow Chem. Co. v. NOVA Chem. Corp.*, 803 F.3d 620 (Fed. Cir. 2015). It allowed the patent owner’s expert to backfill missing disclosure in the patent with unsubstantiated opinion. This backfilling, however, cannot rescue the asserted claims of the ’356 patent from being found invalid as indefinite.

But even if the patent-in-suit were valid, Presidio did not make a *prima facie* case that it is entitled to lost profits damages. Lost profits are only appropriate where a patent owner shows “‘causation in fact,’ establishing that ‘but for’ the infringement, he would have made additional profits.” *Grain Processing Corp. v. Am. Maize-Products Co.*, 185 F.3d 1341, 1349 (Fed. Cir. 1999). ATC’s 560 capacitor—which is less expensive and better performing than the BB capacitor—prevents Presidio from meeting that burden. *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1156 (6th Cir. 1978). But, by focusing exclusively on the existing market, Presidio and the district court avoided answering the necessary

question of whether this non-infringing and available capacitor is “acceptable” to consumers. They relied only on facts that have no bearing on whether, absent infringement, the 560 capacitor is the “next-best available alternative” to Presidio’s BB capacitors. *Grain Processing*, 185 F.3d at 1351. This reliance constitutes legal error and mandates a reversal of the lost profits award.

In addition to committing legal errors, the district court abused its discretion in entering a permanent injunction. The claimed fringe-effect capacitance is irrelevant to demand and, thus, there exists no causal nexus between infringement and any harm allegedly suffered by Presidio. *Apple Inc. v. Samsung Elecs. Co.*, 695 F.3d 1370, 1374 (Fed. Cir. 2012).

ARGUMENT

I. STANDARDS OF REVIEW

This Court reviews whether a patent’s claims are indefinite *de novo*. *Dow Chem.*, 803 F.3d at 625; *Teva Pharms.*, 789 F.3d at 1342.⁵ A district court’s damages determination, including an award of lost profits, is reviewed for clear error—that is, whether it is based upon “an erroneous conclusion of law, clearly erroneous factual findings, or a clear error of judgment amounting to an abuse of discretion.” *Grain Processing*, 185 F.3d at 1349 (quoting *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d

⁵ See also *Teva Pharms.*, 789 F.3d at 1342 (“[A party] cannot transform legal analysis about the meaning or significance of the intrinsic evidence into a factual question simply by having an expert testify on it.”).

1538, 1543 (Fed. Cir. 1995)). The grant or denial of a permanent injunction is reviewed for abuse of discretion. *See, e.g., eBay Inc. v. MercExchange, LLC*, 547 U.S. 388, 391 (2006); *Apple Inc. v. Samsung Elecs. Co.*, 735 F.3d 1352, 1359 (Fed. Cir. 2013).

II. THE PATENT CLAIMS ARE INDEFINITE AS A MATTER OF LAW UNDER THE NAUTILUS TEST.

The '356 patent requires that external contacts be “sufficiently close”—with the only guidepost being the presence of fringe-effect capacitance that rises to the level of “capable of being determined by measurement.” But the intrinsic evidence discloses no test for resolving when fringe-effect capacitance reaches this level. Appx1032. This failing on the part of the patent and its specification and prosecution history alone necessitates reversal. *See, e.g., Teva Pharms.*, 789 F.3d at 1337-38 (holding claims indefinite because the intrinsic evidence failed to inform skilled artisans how to resolve the claim scope); *Dow Chem.*, 803 F.3d at 630-31 (same).

With the intrinsic evidence supplying no test, Presidio’s expert invented and “developed for this case” a complex series of four experiments. Appx1011-1013. To make matters worse, the litigation-driven experiments lack objective criteria, leaving ATC and the public dependent “on the unpredictable vagaries” of Dr. Huebner’s opinions. *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014) (quotations and citations omitted). The court below credited those

opinions and Dr. Huebner’s ultimate conclusion of definiteness in direct violation of this Court’s prior holdings. *See, e.g., Teva Pharms.*, 789 F.3d at 1342.

A. The Alleged Invention is Defined By a Term of Degree.

As described above, the asserted point of novelty of the ’356 patent is said to occur when the external contacts become “sufficiently close” so that the fringe-effect capacitance becomes “capable of being determined by measurement.” *See, e.g., Appx137-146.* This element is necessarily one of degree; it calls for a comparison against some baseline or yardstick. *Liberty Ammunition, Inc. v. United States*, No. 2015-5057, -5061, 2016 WL 4488151, at *5 (Fed. Cir. Aug. 26, 2016). At some point the external contacts become “sufficiently close” so that “fringe-effect” capacitance—which *always* exists between external contacts—transforms from being merely theoretical to “practically measurable.” The patent contains no discussion or guidance as to how to ascertain when that transformation occurs.

While not all terms of degree fail for indefiniteness, they must “when read in light of the specification and the prosecution history,” “provide objective boundaries for those of skill in the art.” *Inverval Licensing*, 766 F3d at 1371. Moreover, “[t]erms of degree are problematic if their baseline is unclear” *Liberty Ammunition*, 2016 WL 4488151, at *5. This Court “especially take[s] caution when presented with terms of degree following the Supreme Court’s decision in *Nautilus*.” *Id.*

B. The Intrinsic Record is Bare of Any Objective Means to Define the Patent's Term of Degree.

The '356 patent cannot satisfy 35 U.S.C § 112 because a POSITA does not know when a capacitor has external contacts that are “sufficiently close” so as to cause the kind of fringe-effect capacitance that can be determined by measurement, and when it does not. Following *Nautilus*, this Court demands that the *intrinsic evidence* must spell out objective boundaries for the claims, requiring that “the patent and prosecution history must disclose a single known approach” to determining claim scope. *Dow Chem.*, 803 F.3d at 630-31; *accord Interval Licensing*, 766 F.3d at 1371. But the sole example the '356 patent provides for how close the external contacts must be to be “sufficiently close” (0.002 inches or 2 mils) is not helpful. Appx349 ('356 patent, 9:64-10:10). Even Presidio insists the distance between external contacts cannot determine whether a capacitor comes within the scope of the claims. Appx966; *see also* Appx168-170, Appx2776-2777.⁶

Presidio's amendment of the asserted claims to purportedly distinguish between fringe-effect capacitance that is “practically measurable, not merely what

⁶ In addition, one example is not enough to set out the clear metes and bounds of a claim as the public must know “not only what falls inside the scope of the claim term, but also what falls outside of it.” *Versata Software, Inc. v. Zoho Corp.*, No. A-13-CA-00371-SS, 2016 WL 5793778, at *5 (W.D. Tex. Oct. 3, 2016) (citations and quotations omitted); *see also Prolifiq Software, Inc.*, 2014 WL 3870016, at *6 (“[E]xamples do not necessarily provide information about what falls outside of the scope of the claims.”).

is theoretical or simulated” also does not remedy the claims’ indefiniteness. Appx2659, Appx2668. The ’356 patent still discloses no objective standard for determining when fringe-effect capacitance between a capacitor’s external contacts can actually be determined by measurement. Appx1032 (no disclosure of fringe-effect test), Appx991 (no disclosure of the Huebner test), Appx1033 (no disclosure of the elements of the Huebner test); *accord* Appx1361 (impossible to test).

1. The Inventors and Presidio’s Expert Admit There is No Test in the Patent.

There simply is no doubt and no dispute—the ’356 patent fails to disclose any test or method for resolving when fringe-effect capacitance between external contacts is determinable by measurement.⁷ The lack of any method or criteria for measuring fringe-effect in the patent is unsurprising. The inventors themselves *never*—including before filing their patent application—simulated or measured fringe-effect capacitance in a multilayer capacitor. Appx514.

Presidio’s expert, Dr. Huebner, also confirmed that there was no test disclosed in the patent for ascertaining when the required fringe-effect capacitance is present.

Q. If the ’356 patent had disclosed how to test for the fringe-effect capacitance between the external contacts of a multilayer ceramic capacitor, would you have used that test in your analysis, yes or no?

⁷ The only instance of any variant of the word “measure” in the specification is unrelated to fringe-effect capacitance; it refers only to the total capacitance of two prior art capacitors connected in parallel. Appx346 (’356 patent, 4:4-11).

A. Hypothetical. It doesn't – it doesn't include the test

Appx1032; *accord* Appx1360-1361. Whether hypothetically Dr. Huebner would have used a test disclosed in the patent-in-suit is admittedly unimportant. Very germane to the definiteness inquiry, however, is the fact that he did not use a test from the '356 patent. He did not because there is none.

2. Resort to Insertion Loss Measurements Does Not Change the Lack of Disclosure.

In an attempt to stave off an indefiniteness holding, Preidio and Dr. Huebner plucked from the patent references to insertion loss and alleged that these references inform a POSITA how to understand the claims. Insertion loss testing, however, cannot save the '356 patent.

First, it is not disputed that insertion loss testing alone cannot isolate fringe-effect capacitance. Appx970-972; *accord* Appx1246-1247; *see also* Appx1245-1256. The network analyzer only measures the overall performance of a capacitor as a “device-under-test” or a black box; it does not resolve the comparative contributions, if any, from different capacitances—including fringe-effect capacitance—within the device.⁸

⁸ For example, the network analyzer does not know if the device it is testing is “a capacitor or a turkey sandwich.” Appx972; *accord* Appx1355-1356, Appx4578, Appx1141-1142, Appx1153, Appx4581.

Further, the '356 patent does not disclose how to make insertion loss measurements with a network analyzer to show fringe-effect capacitance. *See supra* 15-16. Dr. Huebner conceded that there is nothing in the patent that says a network analyzer can be used to determine whether the external contacts of a multilayer capacitor have a determinable fringe-effect capacitance between them. Appx990. This admission alone is fatal to the patent's validity.

Despite these admissions, Presidio—and the district court at Presidio's urging—relied upon the insertion loss plots of Figures 21A and 21B in the '356 patent as directing a skilled artisan how to test for fringe-effect capacitance. For example, the district court found:

ATC argues that the intrinsic record does not disclose how to measure fringe-effect capacitance between a capacitor's external contacts. (Doc. No. 341-1 at 4-9.) ATC is wrong. The specification of the '356 patent discloses the use of insertion loss measurements. See '356 Patent at figs. 21A, 21B, 6:10-15, 7:3-18.

Appx41. The district court could not have been more wrong if it held that “day” was “night.”

Figures 21A and 21B relate to capacitors that do *not* have the recited fringe-effect capacitance. Appx1024-1025, Appx1029-1030. The insertion loss plot of Figure 21A is expressly linked to Figure 8A, which is a “PRIOR ART” multilayer capacitor. Appx339, Appx348, Appx1024. Similarly, the insertion loss plot of

Figure 21B corresponds to Figure 9A. Appx348. Figure 9A, as Presidio's expert admitted, bears no relation to the claimed invention:

Q. So according to the '356 patent, Figure 9A is not a capacitor that would practice or fall within the fence defined by Claim 1, correct?

A. That's the way it's worded.

Appx1029. In other words, even according to Presidio, the insertion loss plots in the patent are unrelated to the claimed fringe-effect capacitance.

And yet the district court relied on Figures 21A and 21B as disclosing "how to measure fringe-effect capacitance between a capacitor's external contacts."

Appx41. The court explained:

The specification of the '356 patent discloses the use of insertion loss measurements. *See* '356 Patent at figs. 21A, 21B, 6:10-15, 7:3-18. Further, the prosecution history explains that insertion loss measurements as referenced in figures 21A and 21B are the proper method of measurement for showing the effects of the capacitance formed according to the invention. (Doc. No. 212-2, Slonim Decl. Ex. 2 at 12.) Thus, the intrinsic record discloses the relevant method of measurement.

Id. Clearly, Presidio led the court astray with the self-serving and misleading statements it made in the reexamination just months before trial. The district court cited to the reexamination file history for the proposition that:

The specification shows that the effects of a capacitance formed according to the invention can be shown by measurement, such as is done in the measurements of insertion loss referenced in the patent in Figs. 21A and 21B.

Appx2654. Not only should Presidio's reexamination statements have been viewed with skepticism given their context, but they ultimately were proven incorrect. Both the patent and the admissions of Dr. Huebner establish that the "capacitance formed according to the invention" is wholly absent from Figures 21A and 21B. Thus the district court's holding that the intrinsic record discloses how to measure the recited fringe-effect capacitance is based on a fundamental misunderstanding of the insertion loss plots shown in the patent.⁹

At bottom, the '356 patent contains no discussion or suggestion of how insertion loss relates to or can be used to identify fringe-effect capacitance "determinable by measurement in terms of a standard unit."

3. Presidio Does Not Even Cite to the Original File History.

The prosecution history of the '356 patent also fails to provide "any guidance as to which method should be used [to assess the scope of the claim limitation] or even whether the possible universe of methods is limited to" the experiments that Presidio now relies on for this litigation. *Dow Chem.*, 803 F.3d at 634. Indeed, Presidio and its expert never even cited to any prosecution history (other than its

⁹ The testing actually done by Presidio's expert confirms that insertion loss testing, without more, cannot resolve the last element of claim 1. Dr. Huebner's "orientation sensitivity" experiments were not enough to determine whether the required fringe-effect capacitance was present. *Supra* at 14-15. If four insertion loss plots for a single capacitor cannot resolve whether the required fringe-effect capacitance is present, two plots for devices that have no fringe-effect capacitance cannot teach anything about the claimed fringe-effect capacitance between external contacts.

self-serving and misleading statements in the reexamination) in the record below. This glaring omission is, perhaps, explainable because the prosecution history provides no support whatsoever for the approach Dr. Huebner took to testing for fringe-effect capacitance. *Infra* at 35-39.

* * *

This Court looks to “the patent record—the claims, specification, and prosecution history—to ascertain if they convey to one of skill in the art with reasonable certainty the scope of the invention claimed.” *Teva Pharms.*, 789 F.3d at 1340; *see also Nautilus*, 134 S. Ct at 2130 (emphasizing the “definiteness requirement’s public notice function.”) The patent record here is empty.

C. The Testing Invented by Presidio’s Expert Proves that the Claims Are Indefinite.

With no guidance in the intrinsic record, Presidio’s infringement evidence at trial consisted exclusively of the “Huebner test,” which was admittedly:

- “developed for this case;”
- “invent[ed]” in 2015 by a team having a higher skill than a POSITA; and
- conducted as if “performing research for the first time.”

Appx945-946, Appx969, Appx972, Appx985-986, Appx989-990, Appx1003, Appx1011-1012. In addition, Dr. Huebner’s analysis requires a subjective review of the data resulting from the combination of his complex cocktail of experiments. Dr. Huebner—without any corroboration—testified that a POSITA would “know

how” to create, perform, and combine his experiments, could “figure it out on their own,” or could otherwise “unravel[] this mystery” as of the patent’s 2002 priority date. Appx992-993, Appx1011, Appx1031-1032. But the law on indefiniteness requires that there be no “mystery” to unravel. Any patent that contains such a mystery simply does not meet the requirements of 35 U.S.C. § 112.

1. The Scope of the Claims Cannot Be Determined Based on a Complex Combination of Experiments Invented *Post Hoc*.

This Court deems claims invalid as indefinite when the patent owner’s expert invents a new method for determining claim scope at trial. *See, e.g., Dow Chem.*, 803 F.3d at 634 (“Dow’s expert . . . developed a method for measuring maximum slope Under *Nautilus* this is no longer sufficient.”); *id.* at 635 (finding claims indefinite “even though the patentee’s expert . . . testified that someone skilled in the art could determine which method was the most appropriate”). A claim is not definite simply because the patent owner identifies “*some standard*” for determining the scope of the claim. *Interval Licensing*, 766 F.3d at 1370-71 (quoting *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1351 (Fed. Cir. 2003), abrogated on other grounds by *Nautilus*, 134 S. Ct. 2120); *see also Liberty Ammunition*, 2016 WL 4488151, at *7. Rather, the claims, when read in light of the intrinsic evidence—not an expert’s *post hoc* test—must provide objective boundaries for those of skill in the art. *Nautilus*, 134 S. Ct. at 2130.

The only evidence Presidio presented at trial was the very kind of evidence this Court has deemed insufficient. As described in detail above, Dr. Huebner concluded that a POSITA could view results from the combination of his four experiments to divine whether or not the accused device comes within the scope of the claims.¹⁰ But in addition to not disclosing any of these four experiments, the patent is also silent as to their combination. Dr. Huebner agreed; he noted in jest at trial that, if the '356 patent had described his combination of experiments, “[t]here would have been no need to retain me.” Appx991.

Moreover, no extrinsic evidence corroborated Dr. Huebner’s purported combination of experiments. Again, Dr. Huebner wholeheartedly agreed that, as of the relevant 2002 timeframe, there were no “industry publications or peer reviewed articles that discuss [his] alleged combination of experiments to determine whether a multilayer ceramic capacitor has fringe-effect capacitance between its external contacts that’s capable of being determined by measurement.” Appx991.

Without question, the “Huebner test” was created for the first time for this litigation:

Q. [Presidio] sought you out because . . . 13 or 14 years after the . . . the application for the '356 patent was filed, there still is not a test anywhere described in any industry publication or peer

¹⁰ Appx992 (“I know I referred to it as a jigsaw puzzle . . . It’s a wonderful way to ascribe multiple measurements, modeling. That combination is what yields the final result. It’s never the—you cannot look at one puzzle piece and see the picture.”).

reviewed article that would tell someone how to test for the last element in Claim 1. You had to get involved in this case to invent that in the first instance.

- A. This is how science proceeds. It's on the basis – what's the – *need is the mother of all invention. There was no need to try to figure this out before this time period because there was no lawsuit. There was no – wasn't any infringement case that would have demanded.* You would find that the nature of what we've done is simple and straightforward with respect to the measurements and the variations on the multilayer capacitors that helped us draw our conclusions. That's – that's the norm for insertion loss, how to change a multilayer capacitor, all those things. That's been known for a long time, but *there was no need to pull it all together until this infringement case came up.*

Appx1012-1013 (emphasis added); *see also* Appx985-986. Accordingly, Presidio's expert used “not even an established method but rather one developed for this particular case.” *Dow Chem.*, 803 F.3d at 635. It was, in his own words, an “invention” created more than a decade after the patent was granted. *See Interval Licensing*, 766 F.3d at 1370-71.

2. Presidio Cannot Rely on the Personal Judgment of Dr. Huebner to Define Claim Scope.

After *Nautilus*, an expert's “say so” is no longer sufficient. *See, e.g., Otsuka Pharm. Co., Ltd. v. Torrent Pharms. Ltd., Inc.*, 151 F. Supp. 3d 525 (D.N.J. 2015) (synthesizing *Nautilus*, *Dow*, and *Teva*). Here, where the expert applied “only his judgment of what a person of ordinary skill would believe and did not interview anyone or cite any references discussing how a person at the time of the patent application would have” done it, the claims are invalid. *See Dow Chem.*, 803 F.3d at 634.

Dr. Huebner was clear:

Q. So you can't point to anything in 2002 that actually shows a POSITA was aware how to do that? It's just your say so that they could have?

A. I object to the use of the word "say so." Excuse me, but that's my expert opinion. Say so, that's a -- that would be a red button for me.

Q. I will rephrase.

A. Thank you.

Q. You can't point to anything in the 2002 time frame that would have shown that a person of ordinary skill in the art would have known how to determine whether there is a fringe-effect capacitance between the external contacts that's capable of being determined by measurement? You can't point to anything, can you?

A. I cannot, nor would a POSITA need to be told what to do. That's what a POSITA is. They can figure it out on their own. They don't need a publication to figure it out. It's what engineers do. It's what scientists do.

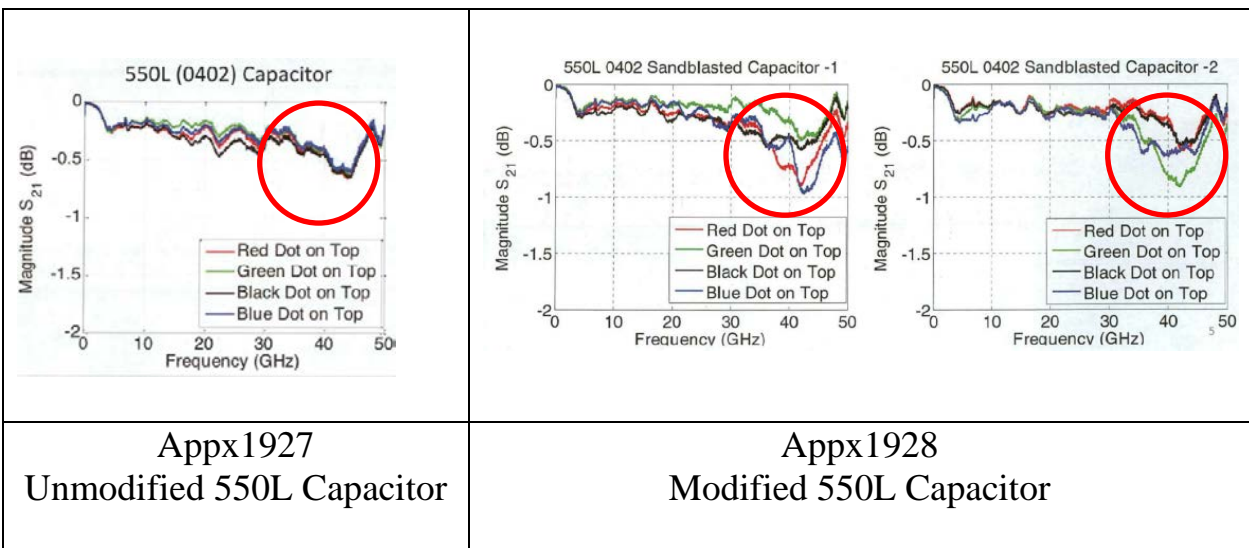
Appx1011. In summary, Dr. Huebner testified that a skilled artisan must—unguided by the intrinsic evidence or any scientific literature—create, perform, and interpret the results of a science experiment. However *bona fide*, Dr. Huebner's unsupported belief that a POSITA would know exactly which novel experiments to perform and how to interpret those experiments to determine whether an accused device falls inside or outside the scope of the claims cannot satisfy 35 U.S.C. § 112.

3. The Results of the Testing Done by Presidio's Expert are Purely Subjective.

Even if one were to accept Dr. Huebner's novel *post hoc* test for determining whether devices meet the last limitation of claim 1, his methodology requires an

inherently subjective analysis for determining infringement.

For example, Dr. Huebner's personal view of orientation insensitivity is not grounded by any objective standard. He claims that removing the dielectric from the accused product "did *not*" "impact . . . the orientation sensitivity." Appx897 (emphasis added). Examination of his test data shows, however, that when he removed the dielectric material from the capacitors, the modification *does* impact orientation insensitivity. As demonstrated below, for the unmodified 550L capacitor, the plots of insertion loss corresponding to each of the capacitor's four mounting orientations are substantially on top of one another—they are orientation insensitive. Appx1927. For two sandblasted 550Ls, the insertion loss plots for the four mounting orientations are clearly *not* on top of each other. Appx1928. Dr. Huebner concludes, without any explanation of the deviation, that these modified capacitors are still orientation insensitive. Appx895-897.



That Dr. Huebner could assert that the data (especially within the red circles added to the plots) shows no impact on orientation sensitivity is remarkable. He can make such an assertion only because there are no objective criteria in the '356 patent or otherwise known in the industry or scientific community to allow a POSITA to understand as of the patent's 2002 priority date what magnitude, distribution, or behavior exhibited in insertion loss data would mark what is and what is not orientation insensitive. *See Nautilus*, 134 S. Ct. at 2129 (nothing that “absent a meaningful definiteness check, we are told, patent applicants face powerful incentives to inject ambiguity into their claims”).

Dr. Huebner's conclusion ultimately rests upon his belief that the insertion loss data shows that the unmodified and modified capacitors “behave similarly” and have “good behavior.” Appx901, Appx912-913. There are, however, no criteria for making this assessment. For example, whereas Dr. Huebner concluded that two capacitors “behave similarly” in terms of insertion loss, the test data shows that one capacitor behaved worse, i.e., by as much as double the insertion loss, for the highest frequencies. Appx1876; *see also supra* at 16-18.

Because there are no objective criteria, infringement of claim 1 of the '356 patent “depends ‘on the unpredictable vagaries of any one person's opinion.’” *Interval Licensing*, 766 F.3d at 1371 (quoting *Datamize*, 417 F.3d at 1350). In this

case, the effects of fringe-effect capacitance capable of being determined by measurement on the capacitor rested entirely on Dr. Huebner's opinion.

D. The District Court Erred by Crediting Unsupported Expert Opinion on the Ultimate Question of Indefiniteness.

The meaning a POSITA would attribute to a claim term “in light of its use in the claims, the disclosure in the specification, and the discussion of this term in the prosecution history is a question of law.” *Teva Pharms.*, 789 F.3d at 1342. Even so the district court credited Dr. Huebner's conclusory testimony that a POSITA would know how to invent a test for the last element of claim 1. Appx37-41. As a result, it abdicated its role to Dr. Huebner, who could not point to a single piece of corroborating evidence from the patent, from the industry, or from the scientific literature to support his opinion. That abdication runs afoul of this Court's holdings in *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335 (Fed. Cir. 2015).

The district court stumbled at the threshold when it credited Dr. Huebner's testimony that “a PHOSITA would understand from the '356 patent's disclosure of insertion loss measurements that it is insertion loss measurements that define the scope of the patent.” Appx38. This is precisely the type of inference that cannot be left to the expert—the patent does not say this, only Dr. Huebner does. *See Teva Pharms.*, 789 F.3d at 1342 (when considering whether the meaning of a claim term can be inferred from the intrinsic evidence, “such an inference is part of the legal analysis, not a fact finding to be given deference.”). Further, Dr. Huebner squarely

admitted that there are no insertion loss measurements in the patent that relate in any way to fringe-effect capacitance. *Supra* at 31-34.

Next, the district court adopted wholesale Dr. Huebner's opinion as to how a POSITA would use insertion loss as a means to identify the claimed fringe-effect capacitance. It found that:

- “a PHOSITA would be able to make a capacitor, make modifications to a capacitor, identify each of those modifications in an equivalent circuit identifying discrete capacitances, and measure the performance of the capacitor” and
- “a PHOSITA would know how to make modifications to the capacitor to isolate discrete features of the capacitor, such as discrete capacitances including the fringe-effect capacitance.”

Appx39. None of this is in the patent; the patent does not describe or suggest making “modifications” to capacitors to resolve whether fringe-effect capacitance is capable of being determined by measurement. The district court's findings relate to the “dielectric removal” science experiment that Dr. Huebner invented for use in this case. *Supra* at 16-18. Dr. Huebner admitted that this experiment, too, was not disclosed in the intrinsic evidence. Appx1033; *accord* Appx1363.

Finally, the district court credited Dr. Huebner for its ultimate conclusion.

Importantly, Dr. Huebner testified that the fringe-effect capacitance between the external contacts of a capacitor is one of the discrete capacitances that a PHOSITA would be able to determine the specific capacitance of, in terms of the standard unit of Farads.

Appx40. The court's deferral to Dr. Huebner on this point was both factually and legally incorrect. Dr. Huebner never actually reduced any insertion loss plot to Farads of fringe-effect capacitance; he just issued his "say so" that a POSITA could do it. Appx1010-1011, Appx1016-1018. He also admitted that the patent did not disclose using insertion loss to identify the required fringe-effect capacitance. *See, e.g.*, Appx989-990, Appx1544-1545. But even if Dr. Huebner had testified that the required fringe-effect capacitance could be determined in Farads, "[t]he district court should not defer to [an expert's] ultimate conclusion about claim meaning in the context of this patent." *Teva Pharms.*, 789 F.3d at 1342. It, however, did just that.

E. The Claims Here Are Even More Indefinite than Those in *Dow*.

Just as the claims in *Dow Chem. Co. v. Nova Chems. Corp.* could not satisfy 35 U.S.C. § 112, the claims here are indefinite. 803 F.3d at 634-35.

In *Dow*, the claims mandated a particular "slope of strain hardening coefficient greater than or equal to 1.3." *Id.* at 624-25. The accused infringer argued that the claims were indefinite because the patent did not teach a POSITA "how to measure the 'slope of strain hardening,' which is required to calculate the strain hardening coefficient." *Id.* at 625. Multiple possible measurements existed, but the patent was silent as to which measurement a POSITA should use. *Id.* at 633-34. Dow's expert acknowledged that three different methods could possibly identify the maximum slope of a hardening curve, and he developed a fourth solely for the case. *Id.* at 633. This Court held the claims in *Dow* invalid as indefinite as the patentee's

expert's "chosen method was not even an established method, but rather one developed for this particular case." *Id.* at 635.

There are an extraordinary number of parallels between the facts in *Dow* and this case. Some of those parallels are provided side-by-side in the following table:

<i>Dow</i>	The Present Case
A conventional Instron Tensile Tester can be used to plot a "tensile curve" or "stress strain curve" of the load applied to a sample. <i>Dow Chem.</i> , 803 F.3d at 631.	A "network analyzer" can be used to plot "insertion loss" for a capacitor as a whole. <i>Supra</i> at 14-15.
The plot of the "stress strain curve" must be interpreted to determine a "slope of strain hardening coefficient." <i>Id.</i>	Presidio's expert must perform experiments (including creating insertion loss plots) that must be interpreted to infer the presence of the claimed fringe-effect capacitance. <i>Supra</i> at 14-18, 36-41.
The "slope of strain hardening coefficient" was not previously known in the art. <i>Id.</i>	There are no references in the literature to fringe-effect capacitance capable of being determined by measurement. <i>Supra</i> at 5, 18, 37-38.
"Neither the patent claims nor the specification here discusses the four methods or provides any guidance as to which method should be used or even whether the possible universe of methods is limited to these four methods." <i>Id.</i> at 634.	No test for determining the existence of the claimed fringe-effect capacitance is discussed in the patent or the claims. <i>Supra</i> at 5, 18, 29-35.
"For purposes of this case, Dr. Hsiao developed yet another method—of his own invention—to calculate the slope of strain hardening." <i>Id.</i> at 633.	For the purposes of this case, Presidio's expert developed a new method of his own invention. <i>Supra</i> at 35-42.

<p>“[T]he patentee’s expert. . . testified that someone skilled in the art could determine which method was the most appropriate.” <i>Id.</i> at 635 (citations omitted).</p>	<p>Presidio’s expert testified that someone skilled in the art would “know how” to test or could otherwise “figure it out.” <i>Supra</i> at 35, 38-39.</p>
<p>“[The expert] admitted that he applied only his judgment of what a person of ordinary skill would believe and did not interview anyone or cite any references discussing how a person at the time of the patent application would have calculated the slope of strain hardening.” <i>Id.</i> at 634.</p>	<p>The record is devoid of any evidence that Presidio’s expert interviewed anyone and there are no references discussing how a person at the time of the patent application would have determined the existence of fringe-effect capacitance. <i>Supra</i> at 35-42.</p>

In light of *Dow*, the claims of ’356 patent cannot survive. Presidio argued below that *Dow* was distinguishable because it involved a choice among multiple methods of measurement, while Presidio presented a single test for ascertaining claim scope based on insertion loss. But that purported test is the one invented *ex nihilo* by Dr. Huebner for this case. Moreover, in *Dow*, even where there were several known methods to determine claim scope—separate and apart from the method developed for the litigation—the claims were held indefinite. Here, the ’356 patent describes no test and there are no known methods for determining claim scope; Presidio is left only with Dr. Huebner’s litigation testimony. Accordingly, the ’356 patent claims are “are even more clearly indefinite than those in” *Dow*. 803 F.3d at 635.

III. BECAUSE THE 560 CAPACITOR IS AN ACCEPTABLE NON-INFRINGEMENT ALTERNATIVE, PRESIDIO CANNOT BE AWARDED LOST PROFITS.

The district court erred when—relying exclusively upon sales and marketing activity in the existing market—it found that Presidio established that ATC’s 560 capacitor “was not an acceptable non-infringing alternative” and affirmed the jury’s lost profits award. Appx81-82. ATC’s 560 capacitor—like the capacitors accused of infringement and Presidio’s own BB capacitors—is an ultra-broadband, multilayer ceramic capacitor. Appx610, Appx1935, Appx2555, Appx2386. Presidio failed to show that “but for” infringement, consumers in a hypothetical market would have purchased its BB capacitor over ATC’s non-infringing 560 capacitor. This failure renders both the jury’s verdict and the district court’s decision clearly erroneous and thus unsustainable.

A. To Be Entitled To Lost Profits, Presidio Bears the Burden To Show the Absence of an Acceptable Non-Infringing Alternative.

Upon proof of infringement, a patentee is entitled to “damages adequate to compensate [it] for the infringement.” 35 U.S.C. § 284. Damages in the form of lost profits, however, are reserved only for cases in which the patentee can establish that, “‘but for’ the infringement, it would have made the sales that were made by the infringer.” *Rite-Hite Corp.*, 56 F.3d at 1545 (Fed. Cir. 1995); *see also Grain Processing*, 185 F.3d at 1349. As a result, the circumstances under which a patentee can recover lost profits for every infringing unit are limited.

Presidio bore the burden to show a “reasonable probability” of “but for” causation. *Grain Processing*, 185 F.3d at 1349-50; *see Kaufman Co. v. Lantech, Inc.*, 926 F.2d 1136, 1166 (Fed. Cir. 1991) (“It was the patent owner’s burden to prove it *actually* lost sales . . .”). To satisfy its burden, Presidio relied upon the *Panduit* four-factor test. *Panduit Corp.*, 575 F.2d at 1156; *see also DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314 (Fed. Cir. 2009). Failure to meet any one of these four factors precludes a lost profits award. *Smithkline Diagnostics, Inc. v. Helena Labs. Corp.*, 926 F.2d 1161, 1165 (Fed. Cir. 1995); *Panduit*, 575 F.2d at 1156.

Critically, the second *Panduit* factor requires *the patentee* to demonstrate the absence of acceptable non-infringing alternatives. *Id.* *See also Kaufman Co.*, 926 F.2d at 1142; *Omniglow Corp. v. Unique Indus.*, 184 F. Supp. 2d 105, 123 (D. Mass. 2005) (“The second prong makes clear the obvious point that the existence of competitors with non-infringing substitutes precludes a finding of causation and, hence, an award of lost profits.”). This Court previously observed,

[O]nly by comparing the patented invention to its next-best available alternative(s) . . . can the court discern the market value of the patent owner’s exclusive right, and therefore his expected profit or reward, had the infringer’s activities not prevented him from taking full economic advantage of this right.

Grain Processing, 185 F.3d at 1351. Because Presidio offered no evidence to show that ATC’s 560 capacitor is not the “next-best alternative,” it failed to establish “but

for” causation. That is, Presidio did not show that its own BB capacitor, and not the ATC 560 capacitor, would have captured customer sales “but for” infringement.

B. The 560 Capacitor is an Acceptable, Non-Infringing Alternative.

To establish “but for” causation under the second factor of the *Panduit* test, Presidio was required to show that the 560 capacitor (i) would have been unacceptable in the hypothetical “but for” market, (ii) is infringing, or (iii) was absent because it was not available in the relevant timeframe. *See, e.g., Grain Processing*, 185 F.3d at 1350-51. Presidio never alleged that the 560 capacitor infringes and presented no evidence to establish that it is unavailable. Instead, it relied upon what it cast as limited sales (i.e., the 88,000 units) in the existing market to argue that the 560 capacitor is not “accepted.” But the quantity of units sold in the *actual* market—when the infringing capacitor also was being sold—cannot establish unacceptability in the *hypothetical* market under *Panduit* factor two. It, thus, was clear error for the district court to maintain Presidio’s lost profits damages award.

1. Presidio Offered No Evidence of Infringement and the 560 Capacitor is Undisputedly on the Market.

As to infringement, the record is void. Presidio did not accuse the 560 capacitor of infringement and its experts never opined on whether this alternative contained the required fringe-effect capacitance claimed by the patent-in-suit.

Appx1287 (ATC’s chief legal officer noting that Presidio never accused the 560 capacitor of infringement).

In addition, the availability of the 560 capacitor as an alternative in the hypothetical market is undeniable. To be an alternative, the product need only be “available or on the market.” *Grain Processing*, 185 F.3d at 1349; *see also Siemens Med. Sols. USA, Inc. v. Saint-Gobain Ceramics & Plastics, Inc.*, 637 F.3d 1269, 1288 (Fed. Cir. 2011). Here, the 560 product was on the market. As the district court found, “the evidence presented at trial showed that ATC sold 88,000 560L capacitors during the relevant infringement period.” Appx81; *see also* Appx1287, Appx4569. Moreover, a bag of 560 capacitors was present in the courtroom and shown to the jury. Appx1285-1286, Appx4570.

Presidio cannot and did not contest these availability facts. Among other things, Presidio’s own damages expert, Mr. Vincent Thomas, testified, “[C]ertainly [the 560 capacitors] have been sold” Appx1101. He further agreed that the 560 capacitors physically present in the courtroom are “available.” Appx1101-1102. But even if the product was not on the market (which it was), Presidio’s expert acknowledged that, by at least December 8, 2015, ATC had access to and knowledge of the material, expertise, and know how to produce the 560 capacitors. Appx1102. *See Grain Processing*, 185 F.3d at 1354; *cf. Fiskars, Inc. v. Hunt Mfg. Co.*, 279 F.3d 1378, 1382-83 (Fed. Cir. 2002) (confirming that if the necessary equipment, know-

how, and experience existed to implement the non-infringing process then the process was an “available” alternative). This access and knowledge—independent of any actual sales—also renders the 560 capacitor “available.”

Thus, notwithstanding the limited distribution of the 560 capacitor in the existing market, the product was “available” under *Panduit* factor two.

2. It was Clear Error to Find the 560 Capacitor Unacceptable.

Presidio presented a paucity of evidence that the 560 capacitor was unacceptable in the hypothetical market. When the district court plugged the resulting evidentiary hole with facts unrelated to “the nature of the market and likely outcomes with infringement factored out of the economic picture,” it committed clear legal error. *Grain Processing*, 185 F.3d at 1350; *cf. SmithKline Diagnostics*, 926 F.2d at 1166 (finding district court “properly considered the realities of the marketplace”).

a. Presidio and the District Court Failed to Construct a Hypothetical Market.

As an initial matter, an alternative need not actually be accepted in the marketplace to be acceptable. “Reconstructing the market, by definition a hypothetical enterprise, requires the patentee to project economic results that did not occur.” *Grain Processing*, 185 F.3d at 1350; *see Crystal Semiconductor Corp. v. TriTech Microelectronics Int’l, Inc.*, 246 F.3d 1336, 1355 (Fed. Cir. 2001) (noting that patentee “must” reconstruct a hypothetical market to show likely outcomes

absent infringement). Nonetheless, at trial, Presidio focused exclusively on how ATC chose to market the 560 capacitor in the *existing market* in which ATC was selling the 550. For example, Presidio’s expert testified that “given the limited nature of how these products are sold in the market, it doesn’t appear that they’ve been *accepted*” Appx1103 (emphasis added).¹¹ But not a single witness testified concerning what actions ATC foreseeably would take or what consumer reaction to the 560 capacitor vis-à-vis Presidio’s own BB product would be in the hypothetical market where the 550 series of capacitors would be absent.

Similarly, the district court improperly relied only upon ATC’s marketing and sales of the 560 capacitor in the *existing market* to deem the 560 capacitor unacceptable. Appx81-82. It found that “the 560L was not widely advertised or touted as a competitive product.” Appx81. It further noted that sales were made to a single customer and on an “as needed basis.” *Id.* It also cited to the fact that Presidio had not heard of the 560 capacitor as a competitive product. But all of this evidence cited by the district court concerns the current market, which includes ATC’s 550 series capacitors.

The district court failed to “take into account . . . alternative actions [ATC] foreseeably would have undertaken had [it] not infringed.” *Grain Processing*, 185

¹¹ Mr. Thomas immediately thereafter admitted that the relevant inquiry, however, is acceptability and not whether the product has been, in fact, accepted. *Id.*

F.3d at 1350-51. For example, the evidence showed that it was not market conditions, but rather ATC, itself, that limited the sales of the 560 capacitor. Indeed, ATC did not even advertise the product on its website. Appx1056-1057.

It was Presidio's (not ATC's) burden to show that if ATC were to promote the 560 capacitors, that—in the absence of the infringing product—the 560 capacitors would not capture market share. Because Presidio presented no evidence on that point, the district court did not find that ATC's marketing behavior would remain unchanged and that the 560 capacitor's sales would continue to be limited if ATC were no longer able to market the 550.¹² Such findings would not only be wholly unsupported by the record, but incredible given this Court's observation that the “competitor in the ‘but for’ marketplace is hardly likely to surrender its complete market share when faced with a patent, if it can compete in some other lawful manner.” *Id.* at 1351.

The argument pressed by Presidio and adopted by the district court would mandate that a non-infringing alternative could only be “acceptable” if it is already

¹² While “sales data showing market acceptance of a non-infringing alternative may provide significant evidence that the alternative was acceptable to consumers,” *Fiskars, Inc.*, 279 F.3d at 1382, the converse is not necessarily true. This is especially so here where ATC did not heavily market the alternative. Moreover, there was no evidence that consumers were not buying the 560 capacitor because of Presidio's BB. *Cf. McGinely v. Franklin Sports, Inc.*, 192 F. Supp. 2d 1214 (D. Kan. 2002) (finding sales data related to noninfringing substitute relevant where retailers were switching from the substitute to patentee's patented product).

competing for the lead in market sales. This argument directly conflicts with the holdings in *Grain Processing* and its progeny that a product need not be on the market at all to be a non-infringing alternative. The 88,000 units of the 560 capacitor sold during the infringement period confirms the alternative's availability and, standing alone, the quantity of sales in the existing market cannot preclude a finding of acceptability. Because both Presidio and the district court failed this Court's requirement to project the realities of a hypothetical market absent infringement, the unacceptability of the 560 capacitor has not been shown.

b. The 560 Capacitor is an Acceptable Alternative.

Even if a hypothetical market is now reconstructed, the evidence of record is wholly inadequate for Presidio to carry its burden—or even make out a *prima facie* case—that the 560 capacitor is unacceptable to consumers of ultra-broadband capacitors. Presidio presented no evidence that the 560 capacitor has a disparately higher price than or possesses characteristics different from the patented product. *Kaufman Co.*, 926 F.2d at 1142 (holding that, to be acceptable, the alternative “must not have a disparately higher price than or possess characteristics significantly different from the patented product”); *see also BIC Leisure Prods., Inc. v. Windsurfing Int’l, Inc.*, 1 F.3d 1214, 1219 (Fed. Cir. 1993) (same). Because the available and non-infringing 560 capacitor would have “captured sales made by the [550 series], despite a difference in the products, it follows that the ‘but for’ test is not met.” *Smithkline Diagnostics*, 926 F.3d at 1166.

First, price does not present a barrier to consumers choosing the 560 capacitor in lieu of either the accused product or Presidio's own ultra-broadband capacitor. The 560 capacitor is three times less expensive than Presidio's BB capacitor and ATC sells the 560 capacitor for *less* than the 550 capacitor. Appx1079, Appx1285 (noting that the 560 capacitor is "somewhat cheaper than the 550"), Appx4566-4569.¹³ *Supra* at 21.

Second, that the 560 capacitor does not have the claimed "fringe-effect" capacitance is immaterial to acceptability. Presidio's Product Manager and Chief Financial Officer testified that consumers "are looking for a low insertion loss capacitor that works over a broad frequency range." Appx533. *See also* Appx449, Appx503 ("[W]hat you want is – is the best quality signal going through the capacitor across a wide range of frequencies."), Appx530-534. They do *not* demand the claimed "fringe-effect" capacitance. Appx534, Appx618.

There is, in fact, no demand because desirable performance can be achieved without "fringe-effect" capacitance. Appx347-348 ('356 patent, 6:18-7:18). For example, the patent-in-suit discusses how high frequency performance can be a function of the capacitance between electrodes *within* the dielectric. Appx347 ('356 patent, 6:48-54). In other words, even without the required "fringe effect"

¹³ This pricing difference also explains ATC's lack of enthusiasm in marketing the 560 capacitor aggressively.

capacitance, the '356 patent itself acknowledges that “the insertion loss is relatively smooth throughout a broad range of frequencies.” Appx348 ('356 patent, 7:3-18). Likewise, the very capacitors that Presidio claims would have captured sales “but for” infringement—Presidio’s own BB capacitors—allegedly meet market demand without “fringe-effect” capacitance. Appx512-514, Appx605-610.

Third, Presidio was constrained from making arguments about the acceptability of the characteristics of 560 capacitor because it *outperforms Presidio’s own BB capacitor*. For example, the 560 capacitor has an insertion loss of less than 0.6dB at 40GHz. Appx2555. This performance is only slightly different from the performance of the 550L, which has an insertion loss of 0.4dB at 40GHz. Appx1285, Appx1935. Presidio offered no evidence or argument that consumers would find the 560 capacitor’s insertion loss unpalatable in a hypothetical market. Nor could it. The performance of Presidio’s comparable BB capacitor at 40GHz, with an insertion loss of 0.9dB, is worse than both the 550L *and* the 560 capacitor. Appx2386, Appx5721. *See supra* at 21. As result, if consumers find the BB’s performance acceptable, they must also find the 560 capacitor’s performance acceptable. Presidio did not even attempt to rebut this simple logical deduction.

In summary, in a market where the 550 series capacitors do not exist consumers could buy the better performing 560 capacitor at a lower price or they could buy the lower performing Presidio BB capacitor at a higher price.

	Best → Worst		
Price	ATC 560L <i>\$0.75 (typical)</i>	ATC 550L <i>\$1.03 to \$3.98</i>	Presidio BB (0502) <i>\$2.30 (average)</i>
Insertion Loss (40GHz)	ATC 550L <i>0.4 dB</i>	ATC 560L <i><0.6 dB</i>	Presidio BB (0502) <i>0.9 dB</i>

Neither Presidio nor the district court addressed this hypothetical market and there is no evidence to support the conclusion that a consumer would make an irrational choice and purchase the Presidio BB capacitor. Nonetheless, the district court concluded that “[t]he evidence in the record was sufficient to allow the jury to find that the 560L was not an acceptable non-infringing substitute.” Appx82. This was clear error.

Because Presidio failed to establish the absence of an acceptable, non-infringing substitute, Presidio is entitled only to reasonable royalty damages. *See, e.g., Grain Processing*, 185 F.3d at 1351-52. The only reasonable royalty calculations performed by either party point to \$0.25 per capacitor. Appx1116-1117, Appx1477-1478. In reversing the lower court’s affirmance of impermissible lost profits damages, this Court can award a reasonable royalty, assuming validity, without remand by adopting the agreed-upon calculation.

IV. PRESIDIO IS NOT ENTITLED TO A PERMANENT INJUNCTION.

Presidio failed to satisfy its burden to establish that it suffered the kind of irreparable injury necessary to support entry of a permanent injunction. *See eBay Inc.*, 547 U.S. at 391. This Court has held that, in order to demonstrate irreparable harm, a patentee must show both “1) that absent an injunction, it will suffer irreparable harm, *and* 2) that a sufficiently strong causal nexus relates the alleged harm to the alleged infringement.” *Apple Inc.*, 695 F.3d at 1374 (emphasis added). Here, because the patented feature does not drive consumer demand, Presidio cannot forge the required causal nexus between any harm it allegedly suffered and ATC’s infringement. For these reasons and others, the district court abused its discretion in granting Presidio a permanent injunction against ATC’s 550 capacitors.

A. The Patented Feature is Unrelated to Consumer Demand.

Consumers in the market for ultra-broadband multilayer capacitors never ask for fringe-effect capacitance; they merely seek capacitors with low insertion loss across a broad range of frequencies and are indifferent as to how this performance is achieved. Appx533-535, Appx618. As discussed above, “fringe-effect” capacitance is unnecessary to achieve desirable performance. *See supra* at 55-56. Moreover, ATC’s 550 capacitors achieve low insertion loss across a broad range of frequencies by utilizing a unique internal electrode design that is nowhere referenced in the ’356 patent.

1. The 550 Series Capacitors' Unique Internal Design Drives Performance.

The 550 series' performance results from their novel internal electrode configuration not, as Presidio contends, from their external contacts.

As disclosed by the '705 patent, the 550 capacitors have “dagger” and “C-shaped” internal electrodes. Appx1417-1420, Appx1422-1423, Appx1537, Appx1974. *See supra* at 18-19. These uniquely-shaped electrodes are distinct from those described in the '356 patent. Appx976-981, Appx1537-1538. Traditional capacitors include electrodes shaped like rectangles. Appx978-979. In this sense, the 550 series capacitors are different and improved capacitors over both the Presidio BB and the previously-accused 545L.

Regarding the source of the 550 series' high performance, Dr. Huebner admitted at trial that: (1) the unique internal electrodes at least “help” drive performance and (2) he could not rule out the possibility that the internal electrode structure is in fact the *sole* cause of the capacitors' exceptional high-frequency performance. Appx981, Appx1017, Appx1537-1541. Indeed, Dr. Huebner could not confirm or deny the effects of this tertiary capacitance.¹⁴ He testified during cross-examination that he could not discern how much of the internal capacitance in the 550 capacitor he had destroyed with his dielectric removal experiment.

¹⁴ Dr. Huebner refers to these internal capacitances as “tertiary” capacitances because this term is used in the '705 patent. Appx1537-1539.

Appx981. And similar to his uncertain dielectric removal test, Dr. Huebner's orientation sensitivity testing could not draw a causal link between the 550 series capacitors' performance and any alleged fringe-effect capacitance. Appx988-989.

Dr. Huebner's own testing in fact demonstrates that the performance *does* come from the internal structures and their capacitances. That is, when Dr. Huebner eliminated some internal capacitance with his "dielectric removal" experiment, the 550 series capacitors performed far less effectively. *Supra* at 16-18. This, itself, reveals the importance of the 550 series capacitors' internal capacitances.

2. Presidio's BB Product Proves that Fringe-Effect Capacitance is Irrelevant to Demand.

An injunction prohibiting the sale of ATC 550 series capacitors will not stem competition. Presidio's BB capacitor does not practice the '356 patent. Appx512-514, Appx605-610. *See supra* at 20. Much like ATC's product, Presidio's BB capacitor derives its low insertion loss performance from its internal geometry. Appx609. Nevertheless, the BB capacitor purportedly competes in the same market as ATC's 550 capacitors. Appx557. Since the BB capacitor does not practice the claims of the '356 patent, Presidio's own product proves that fringe-effect capacitance is not required to meet customer demand. Moreover, that the 550 competes in this market cannot be evidence that the 550 capacitors compete based on the patented feature.

3. Presidio has Shown No, or at Most a Weak, Causal Nexus.

Presidio cannot show that the “infringing features drive consumer demand” and thus it fails to satisfy the causal nexus requirement. *Apple Inc. v. Samsung Elecs. Co.*, 809 F.3d 633, 641 (Fed. Cir. 2015). But even if there were *some* nexus between Presidio’s claimed loss and infringement (which there is not), it is, at best, weak. *Id.* at 641-42 (if a court finds that the infringing features had “some connection . . . with the demand for the infringing products” but were “not the only cause of the lost sales” this finding “may well lessen the weight of any alleged irreparable harm”); *Apple Inc.*, 695 F.3d at 1375 (causal nexus requirement prevents patentee from “leverag[ing] its patent for competitive gain beyond that which the inventive contribution and value of the patent warrant.”).

The district court abused its discretion when it failed to acknowledge numerous concessions by Presidio’s expert and ignored affirmative evidence proffered by ATC as to the source of the performance that customers demand in the 550 series capacitors. Instead of analyzing this mountain of evidence, the district court focused exclusively on a single perfunctory statement by Presidio’s expert that fringe-effect capacitance leads to the highest frequency performance. Appx88. Yet this is “insufficient to establish a causal nexus, as ‘the relevant inquiry focuses on the objective reasons as to why the patentee lost sales, not on . . . subjective beliefs.’”

Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc., No. C 09-5235 MMC, 2015 WL 604582 at *2 (N.D. Cal. 2015) (quoting *Apple*, 678 F.3d at 1328).

Accordingly, the district court's grant of a permanent injunction should be reversed.

B. The Permanent Injunction Must Be Lifted Because Presidio Failed to Establish Lost Profits.

Because the district court found that the jury's award of lost profits was sufficient to demonstrate irreparable injury, Appx87, at a minimum, a remand is necessary for reconsideration of the permanent injunction should this Court reverse the grant of lost profits. *See supra* at 47-57.

CONCLUSION

The asserted claims of '356 patent, in light of the specification and prosecution history, fail to inform a POSITA of the scope of the invention with reasonable certainty. The claims, therefore, are invalid as indefinite under 35 U.S.C. § 112. In addition, the district court's affirmance of the jury's lost profits award and entry of a permanent injunction must be reversed.

Respectfully submitted,

/s/ Ronald E. Cahill

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ADDENDUM

**TABLE OF CONTENTS
ADDENDUM**

Nos. 2016-2607, 2016-2650

Pgs.	Description
Appx25-27	Judgment entered on June 17, 2016 [D.I. 369]
Appx28-29	Permanent Injunction Order entered Aug. 17, 2016 [D.I. 441]
Appx30-58	Order Denying Defendant's Motion for Judgment as a Matter of Law, Motion for Entry of Judgment of Indefiniteness, and Motion for Entry of Judgment on Its Equitable Defenses dated June 17, 2016 [D.I. 368]
Appx59-107	Order Denying Defendant's Motions for Judgment as a Matter of Law and for a New Trial, Granting Plaintiff's Motion for a Permanent Injunction, Denying Plaintiff's Motion for Enhanced Damages dated Aug. 17, 2016 [D.I. 440]
Appx176-182	Order Denying Defendant's Motion to Exclude Expert Testimony dated Jan. 12, 2016 [D.I. 209]
Appx213-226	Order Regarding Motions <i>in Limine</i> dated March 25, 2016 [D.I. 275]
Appx337-352	U.S. Patent No. 6,816,356
Appx356-358	<i>Ex Parte</i> Reexamination Certificate for U.S. Patent 6,816,356 dated Sept. 13, 2011
Appx359-360	<i>Ex Parte</i> Reexamination Certificate for U.S. Patent 6,816,356 dated Dec. 8, 2015

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA**

PRESIDIO COMPONENTS, INC.,
Plaintiff,
v.
AMERICAN TECHNICAL CERAMICS
CORP.,
Defendant.

Case No.: 14-cv-02061-H-BGS

**JUDGMENT IN FAVOR OF
PLAINTIFF**

On April 5, 2016, this action came before the Court for a jury trial with the Honorable Marilyn L. Huff presiding. (Doc. No. 297.) Plaintiff Presidio Components, Inc. appeared and was represented by Gregory Ahrens and Brett Schatz. Defendant American Technical Ceramics Corp. appeared and was represented by Peter Snell, Ronald Cahill, and Heather Repicky.

The jury issues have been tried, and on April 18, 2016, the jury rendered its unanimous verdict on the following questions:

1. Has Presidio proved by a preponderance of the evidence that ATC directly infringed any of the asserted claims of the '356 patent?

2. Has Presidio proved by a preponderance of the evidence that ATC induced infringement of any of the asserted claims of the '356 patent?

1 **The jury answered: Yes for both direct infringement and induced infringement**
2 **as to all the accused products (the 550L Capacitor, the 550S Capacitor, the 550U**
3 **Capacitor, and the 550Z Capacitor) and as to all the asserted claims (Claims 1, 3, 5,**
4 **16, 18, and 19 of the '356 patent).**

5 3. Has Presidio proved by clear and convincing evidence that ATC willfully
6 infringed any of the asserted claims of the '356 patent?

7 **The jury answered: Yes.**

8 4. What amount of lost profit damages, if any, has Presidio proved by a
9 preponderance of the evidence that it would have made but for ATC's infringement of the
10 '356 patent?

11 **The jury answered: Lost Profits: \$2,166,654.**

12 6. Has ATC proved by clear and convincing evidence that claim 1 of the '356
13 patent is indefinite?

14 **The jury answered: No.**
15 (Doc. No. 328.)

16 The Court previously on February 10, 2016 granted ATC's motion for summary
17 judgment of its affirmative defense of absolute intervening rights. (Doc. No. 234 at 28.)
18 In that order, the Court also dismissed with prejudice ATC's affirmative defense and
19 counterclaim that the '356 patent is unenforceable due to inequitable conduct. (Id. at 33.)

20 To the extent that any of the trial issues were reserved for the Court, the Court set a
21 post-trial evidentiary hearing for April 29, 2016. (Doc. No. 322.) The parties then agreed
22 to submit the issues to the Court based on written briefing without further evidence taken
23 in Court. (Doc. Nos. 334, 335.) On June 17, 2016, the Court issued a memorandum
24 decision finding in favor of Presidio and against ATC on all issues submitted to the Court,
25 including indefiniteness, equitable intervening rights, equitable estoppel, and laches.

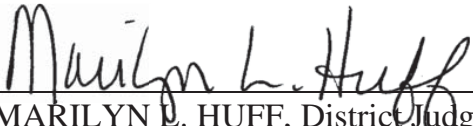
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1 Accordingly, pursuant to the jury's and the Court's findings, the Court enters
2 judgment in favor of Plaintiff on all causes of action and awards Plaintiff \$2,166,654 in
3 damages plus costs as allowed by law subject to a motion for enhanced damages and
4 attorney's fees.

5 DATED: June 17, 2016


MARILYN L. HUFF, District Judge
UNITED STATES DISTRICT COURT

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA**

PRESIDIO COMPONENTS, INC.,
Plaintiff,
v.
AMERICAN TECHNICAL CERAMICS
CORP.,
Defendant.

Case No.: 14-cv-02061-H-BGS

PERMANENT INJUNCTION

1. Defendant American Technical Ceramics Corp. ("ATC") has been found to infringe Claims 1-5, 16, and 18-19 of United States Patent No. 6,816,356 ("the '356 patent") by its manufacture, offers for sale, and sales of the 550L, 550Z, 550S, and 550U capacitors.

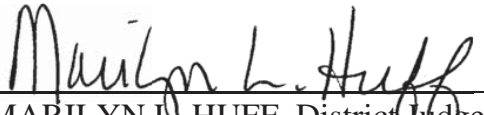
2. ATC's infringement results in irreparable harm to Presidio.

3. It is hereby Ordered that ATC and its officers, agents, servants, employees, and persons in active concert or participation with them during the period commencing ninety (90) days from the date of this Order and through the date of expiration of the '356 patent are hereby enjoined and restrained from making, using, selling, or offering to sell in the United States, or importing into the United States: the 550L, 550Z, 550S, and 550U capacitors; or any other product that is only colorably different from the 550L, 550Z, 550S,

1 and 550U capacitors.

2 4. ATC is required to provide reasonable notice of this Order to all distributors,
3 customers, or other third parties who have ordered, received, or purchased any 550L, 550Z,
4 550S, and 550U capacitors from ATC or any entities recited in Paragraph 3 above to allow
5 ATC and any entities recited in Paragraph 3 to comply with Paragraph 3 of this order, and
6 to provide Presidio proof of such notice.

7 DATED: August 17, 2016

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9 MARILYN L. HUFF, District Judge
10 UNITED STATES DISTRICT COURT
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**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA**

PRESIDIO COMPONENTS, INC.,
Plaintiff,
v.
AMERICAN TECHNICAL CERAMICS
CORP.,
Defendant.

Case No.: 14-cv-02061-H-BGS

ORDER:

**(1) DENYING WITHOUT
PREJUDICE DEFENDANT'S
MOTION FOR JUDGMENT AS A
MATTER OF LAW**

[Doc. No. 307.]

**(2) DENYING DEFENDANT'S
MOTION FOR ENTRY OF
JUDGMENT OF INDEFINITENESS**

[Doc. No. 341.]

**(3) DENYING DEFENDANT'S
MOTION FOR ENTRY OF
JUDGMENT ON ITS EQUITABLE
DEFENSES OF INTERVENING
RIGHTS, ESTOPPEL, AND LACHES**

[Doc. No. 344.]

**(4) DENYING DEFENDANT'S
MOTION FOR A FINDING OF NO
WILLFUL INFRINGEMENT**

[Doc. No. 343.]

**(5) MEMORANDUM DECISION IN
FAVOR OF PLAINTIFF ON ISSUES
TRIED TO THE COURT**

On May 13, 2016, Defendant American Technical Ceramics Corp. filed: (1) a motion for the entry of judgment in its favor on its affirmative defense and counterclaim that the asserted claims of the '356 patent are invalid due to indefiniteness; (2) a motion for the entry of judgment in its favor on its equitable affirmative defenses of equitable intervening rights, equitable estoppel, and laches; and (3) a motion for a finding by the Court of no willful infringement. (Doc. Nos. 341, 343, 344.) On June 6, 2016, Plaintiff Presidio Components, Inc. filed responses in opposition to the three motions. (Doc. Nos. 353, 354, 356.) On June 13, 2016, ATC filed its replies. (Doc. Nos. 360, 361, 364.)

The Court held a hearing on the matters on June 17, 2016. Gregory Ahrens and Brett Schatz appeared for Presidio. Peter Snell and Ronald Cahill appeared for ATC. For the reasons below, the Court: (1) denies without prejudice ATC's Federal Rule of Civil Procedure 50(a) motion for judgment as a matter of law; (2) denies ATC's motion for the entry of judgment in its favor on its affirmative defense and counterclaim that the asserted claims of the '356 patent are invalid due to indefiniteness; (3) denies ATC's motion for the entry of judgment in its favor on its equitable affirmative defenses of equitable intervening rights, equitable estoppel, and laches; (4) denies ATC's motion for a finding by the Court of no willful infringement; (5) issues a memorandum decision in favor of Presidio on the issues tried to the Court.

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Background

On September 2, 2014, Presidio filed a complaint for patent infringement against ATC, alleging infringement of U.S. Patent No. 6,816,356 (“the ’356 patent”). (Doc. No. 1, Compl.) The ’356 patent is entitled “Integrated Broadband Ceramic Capacitor Array.” U.S. Patent No. 6,816,356 B2, at 1:1-2 (filed Apr. 14, 2003). The patent issued on November 9, 2004 and claimed priority to an application filed on May 17, 2002. See id. (See Doc. No. 276-3 ¶ 4; Doc. No. 356-1 at 5.)

A capacitor is a passive electrical component that stores and releases energy and is used in a variety of electrical devices. Presidio Components, Inc. v. American Technical Ceramics Corp., 702 F.3d 1351, 1355 (Fed. Cir. 2012). Generally, a capacitor comprises two parallel metal plates separated by a non-conductive material such as ceramic or air, known as a dielectric. Id. When a capacitor is connected to a power source, electricity passes through the metal plates, but not the dielectric, causing a positive charge to accumulate on one plate and a negative charge on the other. Id. “The capacitor may release this stored energy by connecting the two plates through a conductive path that closes the circuit.” Id. “The amount of energy a capacitor can store is its ‘capacitance.’” Id.

Multiple capacitors may be combined to create a “multilayer capacitor.” Id. A multilayer capacitor is made of several layers of conductive and non-conductive materials stacked together. Id. Each layer in the multilayer capacitor has its own electrical properties affecting the overall performance of the capacitor. Id.

The ’356 patent claims a multilayer capacitor design and teaches a multilayer integrated network of capacitors electrically connected in series and in parallel. Id.; Presidio Components, Inc. v. American Technical Ceramics Corp., 723 F. Supp. 2d 1284, 1289 (S.D. Cal. 2010), vacated on other grounds, 702 F.3d 1351 (Fed. Cir. 2012). This network of capacitors is disposed within a “substantially monolithic dielectric body,” as shown below in Figure 10A. Presidio, 702 F.3d at 1355. The claimed multilayer capacitor creates capacitance between internal parallel plate combinations 10 and 11 while simultaneously creating fringe-effect capacitance between external contacts 72 and 74. Id.

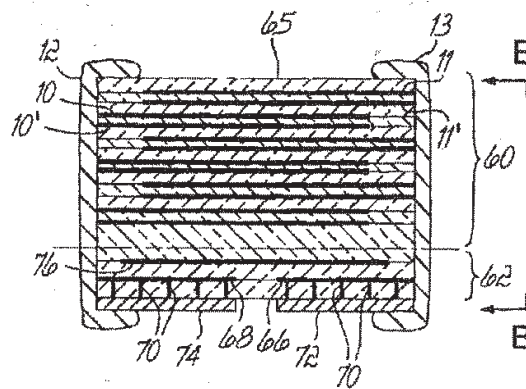


FIG. 10A

On December 8, 2015, the United States Patent and Trademark Office issued a reexamination certificate for the '356 patent, amending certain claims of the patent.¹ (Doc. No. 170-2, FAC Ex. 2.) Amended claim 1 of the '356 patent, the only independent claim asserted by Presidio in this action, is as follows:

1. A capacitor comprising:

a substantially monolithic dielectric body;

a conductive first plate disposed within the dielectric body;

a conductive second plate disposed within the dielectric body and forming a capacitor with the first plate;

a conductive first contact disposed externally on the dielectric body and electrically connected to the first plate; and

a conductive second contact disposed externally on the dielectric body and electrically connected to the second plate, and the second contact being located sufficiently close to the first contact in an edge to edge relationship in such proximity as to form a first fringe-effect capacitance with the first contact that is capable of being determined by measurement in terms of a standard unit.

¹ The PTO previously issued a reexamination certificate for the '356 patent on September 13, 2011. (Doc. No. 170-1, FAC Ex. 1.) This reexamination certificate did not alter any of the claims at issue in the present action. (Id.)

1 U.S. Patent No. 6,816,356 C2, at 1:23-36 (Reexamination Certificate filed Dec. 8, 2015)
2 (emphasis removed from original). The claims in the reexamination certificate were
3 amended in order to overcome a final rejection by the examiner, rejecting the claims at
4 issue as anticipated by the AVX MLC Catalog reference, and in the alternative, as obvious
5 over the AVX MLC Catalog reference in view of the Ceramic Capacitor Technology
6 reference. (See Doc. No. 212-2, Slonim Decl. Exs. 1, 2, 8, 11.)

7 On December 22, 2015, Presidio filed a first amended complaint, alleging
8 infringement of the '356 patent as amended by the reexamination certificate. (Doc. No.
9 170, FAC.) Specifically, Presidio alleged that ATC's 550 line of capacitors infringes
10 claims 1, 3, 5, 16, 18, and 19 of the '356 patent. (Id. ¶ 26.) On December 22, 2015, ATC
11 filed a second amended answer and counterclaims to the first amended complaint, adding
12 an affirmative defense of absolute and equitable intervening rights and an affirmative
13 defense and counterclaim of unenforceability due to inequitable conduct. (Doc. No. 171.)

14 On January 12, 2016, the Court denied Presidio's motions for: (1) summary
15 judgment of definiteness; (2) summary judgment of infringement; (3) summary judgment
16 of ATC's equitable affirmative defenses; and (4) summary judgment of no acceptable non-
17 infringing alternatives. (Doc. No. 210.) In the order, the Court also denied ATC's motions
18 for: (1) partial summary judgment of non-infringement; (2) summary judgment of
19 indefiniteness; and (3) summary judgment of no willful infringement. (Id.) On February
20 10, 2016, the Court granted ATC's motion for summary judgment of its affirmative defense
21 of absolute intervening rights and held that Presidio is entitled to infringement damages
22 only for the time period following the issuance of the reexamination certificate on
23 December 8, 2015. (Doc. No. 234 at 28.) In that order, the Court also dismissed with
24 prejudice ATC's affirmative defense and counterclaim that the '356 patent is unenforceable
25 due to inequitable conduct. (Id. at 33.)

26 The Court held a jury trial beginning on April 5, 2016. (Doc. No. 297.) During the
27 trial, on April 8, 2016, ATC filed a motion for judgment as a matter of law pursuant to
28 Federal Rule of Civil Procedure 50(a). (Doc. No. 307.) On April 18, 2016, the jury

1 returned a verdict finding direct infringement and induced infringement of claims 1, 3, 5,
2 16, 18, and 19 of the '356 patent by ATC as to all of the accused products in the action: the
3 550L, the 550S, the 550U, and the 550Z capacitors. (Doc. No. 328 at 2-3.) In addition,
4 the jury found that Presidio had proven by clear and convincing evidence that ATC's
5 infringement of the asserted claims was willful. (Id. at 4.) The jury awarded Presidio
6 \$2,166,654 in lost profit damages. (Id.) The jury also issued an advisory verdict as to
7 indefiniteness and found that ATC had failed to prove by clear and convincing evidence
8 that claim 1 of the '356 patent is indefinite.² (Id. at 5.)

9 By the present motions, ATC moves for the entry of judgment in its favor on the
10 following issues: (1) ATC's affirmative defense and counterclaim of invalidity of the
11 asserted claims of the '356 patent due to indefiniteness; (2) ATC's affirmative defense of
12 equitable intervening rights; (3) ATC's affirmative defense of equitable estoppel; and (4)
13 ATC's affirmative defense of laches. (Doc. Nos. 341-2, 349.) In addition, ATC moves for
14 a finding by the Court of no willful infringement. (Doc. No. 343-1.)

15 Discussion

16 **I. Rule 50(a) Motion for Judgment as a Matter of Law**

17 During the trial, on April 8, 2016, ATC filed a Rule 50(a) motion for judgment as a
18 matter of law. (Doc. No. 307.) The Court denies the motion without prejudice to ATC
19 filing a renewed motion under Federal Rule of Civil Procedure 50(b) on appropriate issues.
20 See Fed. R. Civ. P. 50(b).

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26 ² The verdict form initially had the "Yes" box marked in response to question No. 6 "Has ATC
27 proved by clear and convincing evidence that claim 1 of the '356 patent is indefinite?" (Doc. No. 328 at
28 5.) During the reading of the verdict in open court, the jurors agreed that checking the "Yes" box in
response to question No. 6 was a clerical error and then amended the verdict form to reflect that the
"No" box should be checked. (See id.; Doc. No. 333 at 8-11)

II. Indefiniteness

ATC moves for the entry of judgment in its favor on its affirmative defense and counterclaim that all of the asserted claims of the '356 patent are invalid due to indefiniteness. (Doc. No. 341-2 at 1-2.) Section 112 of the Patent Act requires that a patent's specification "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention." 35 U.S.C. § 112, ¶ 2. In Nautilus, Inc. v. Biosig Instruments, Inc., 134 S. Ct. 2120, 2124 (2014), the Supreme Court "h[e]ld that a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." See also id. at 2129 ("[W]e read § 112, ¶ 2 to require that a patent's claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty."). Definiteness is measured from the viewpoint of a PHOSITA at the time the patent was filed – here, May 17, 2002.³ Id. at 2128.

The Supreme Court explained that indefiniteness under section 112 requires a "‘delicate balance.’" Id. at 2128. "The definiteness standard 'must allow for a modicum of uncertainty' to provide incentives for innovation, but must also require 'clear notice of what is claimed, thereby appris[ing] the public of what is still open to them.'" Interval Licensing LLC v. AOL, Inc., 766 F.3d 1364, 1370 (Fed. Cir. 2014) (quoting Nautilus, 134 S. Ct. at 2128, 2129). Thus, the definiteness requirement "mandates clarity, while recognizing that absolute precision is unattainable." Nautilus, 134 S. Ct. at 2129.

Indefiniteness is a question of law involving underlying factual determinations. Teva Pharm. USA, Inc. v. Sandoz, Inc., 789 F.3d 1335, 1341 (Fed. Cir. 2015); Green Edge Enters., LLC v. Rubber Mulch Etc., LLC, 620 F.3d 1287, 1299 (Fed. Cir. 2010); see also

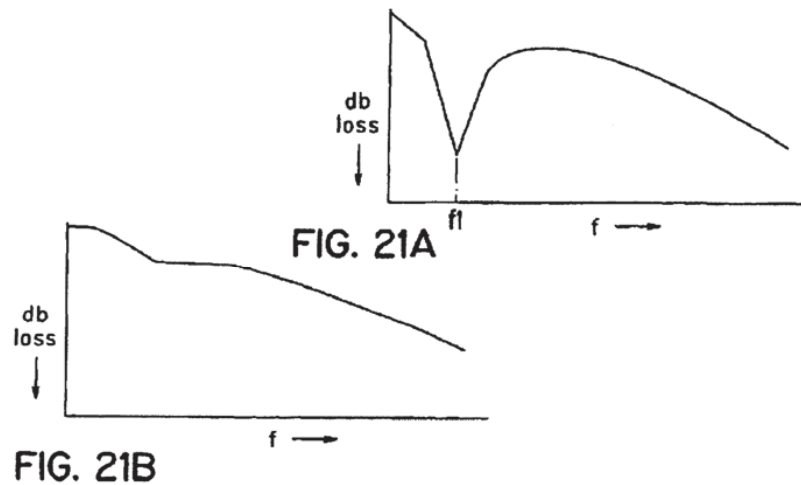
³ The parties agreed that May 17, 2002 is the proper date for assessing indefiniteness. (See Doc. No. 356-1 at 5-6.) Further, the parties agreed that the level of ordinary skill in the art of the '356 patent is medium. (Doc. No. 276-3 ¶ 9; Doc. No. 327 at 59.) The ordinary artisan would hold a Masters or similar degree, or the experiential equivalent thereof, in Electrical Engineering or a similar field, and would have at least two years of industry experience in designing multilayer capacitors. (Id.)

1 Teva Pharm. USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 837-38 (2015) (explaining that
2 sometimes claim construction issues involve underlying factual disputes). The party
3 challenging the validity of the patent-in-suit bears the burden of proving indefiniteness by
4 clear and convincing evidence. See Nautilus, 134 S. Ct. at 2130 n.10 (citing Microsoft
5 Corp. v. i4i Ltd. Partnership, 131 S. Ct. 2238, 2242 (2011)); see, e.g., Teva, 789 F.3d at
6 1345.

7 ATC, as the party challenging the validity of the asserted claims of the '356 patent,
8 bears the burden of providing indefiniteness by clear and convincing evidence. See id.
9 ATC argues that the asserted claims are indefinite based on the following claim language
10 contained in claim 1 of the '356 patent: "the second contact being located sufficiently close
11 to the first contact in an edge to edge relationship in such proximity as to form a first fringe-
12 effect capacitance with the first contact that is capable of being determined by measurement
13 in terms of a standard unit."⁴ (Doc. No. 341-2 at 4-5 (quoting '356 Patent Dec. 8, 2016
14 Reexamination Certificate at 1:31-36).) Specifically, ATC argues that this claim language
15 renders the asserted claims indefinite because the intrinsic record of the '356 patent does
16 not disclose with reasonable certainty how to measure whether the external contacts of a
17 multilayer capacitor are sufficiently close to form the claimed fringe-effect capacitance that
18 is capable of being determined by measurement in terms of a standard unit. (Id. at 1-2.) In
19 response, Presidio argues that the claims are definite because the '356 patent discloses to a
20 PHOSITA how to evaluate whether the fringe-effect capacitance between the external
21 contacts of a capacitor is capable of being determined in terms of a standard unit. (Doc.
22 No. 356 at 7.) The Court agrees with Presidio.

23 The specification of the '356 patent shows the use of insertion loss measurements in
24 Figures 21A and 21B:

25
26
27 ⁴ Claims 3, 5, 16, 18, and 19 of the '356 patent are also asserted in this action. (Doc. No. 170,
28 FAC ¶ 26.) These claims are all dependent to claim 1 and, thus, also contain the above claim limitation.
See '356 Patent at 13:9, 13:26, 14:1, 14:9, 14:13.



'356 Patent at figs. 21A, 21B, 6:10-15, 7:3-18. (Doc. No. 306, Trial Tr. Vol. III at 160-61 170, 178; Doc. No. 331, Trial Tr. Vol. V at 87.) Presidio's expert, Dr. Huebner, testified that insertion loss measurements are well known to a PHOSITA and are known to be the output of a network analyzer.⁵ (Doc. No. 305, Trial Tr. Vol. II at 237; Doc. No. 306, Trial Tr. Vol. III at 117-18, 131, 152-53, 178; see also Doc. No. 153-1 (ATC describing insertion loss testing as "a conventional test").) A network analyzer is able to measure the performance of a multilayer capacitor. (Doc. No. 306, Trial Tr. Vol. III at 169; Doc. No. 330, Trial Tr. Vol. IV at 169-72.) Dr. Huebner further testified that a PHOSITA would understand from the '356 patent's disclosure of insertion loss measurements that it is insertion loss measurements that define the scope of the patent. (Doc. No. 306, Trial Tr. Vol. III at 162; Doc. No. 331, Trial Tr. Vol. V at 195.) Indeed, the prosecution history of the patent explains that insertion loss measurements as referenced in figures 21A and 21B of the patent are the proper method of measurement for showing the effects of the capacitance formed according to the invention. (Doc. No. 212-2, Slonim Decl. Ex. 2 at 12.)

Further, the parties' experts agreed that fringe-effect capacitance is well known in

⁵ ATC's own expert, Dr. Schaper, testified that a PHOSITA is able to understand the insertion loss curves disclosed in these figures. (Doc. No. 331, Trial Tr. Vol. V at 87.)

the art and always exists between the external contacts of a capacitor. (Doc. No. 305, Trial Tr. Vol. II at 261; Doc. No. 306, Trial Tr. Vol. III at 151; Doc. No. 331, Trial Tr. Vol. V at 78.) In figures 9A and 10A of the '356 patent and the associated descriptions in the specification, the patent teaches that external electrodes can be brought into proximity to one another to add to the fringe-effect capacitance of the capacitor and have an impact on the insertion loss performance of the capacitor. See '356 patent at 7:46-56, figs. 9A, 10A. (Doc. No. 331, Trial Tr. Vol. V at 191-94; Doc. No. 306, Trial Tr. Vol. III at 162-63.) Figures 9A and 10A are provided below:

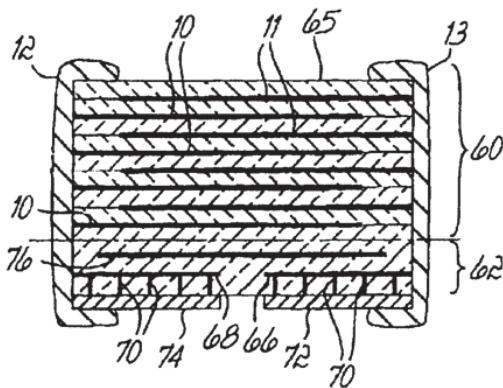


FIG. 9A

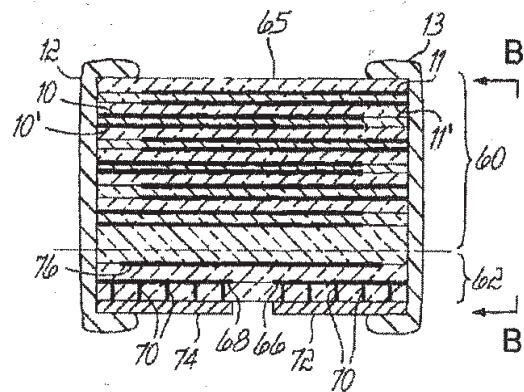


FIG. 10A

Dr. Huebner testified that a PHOSITA would be able to make a capacitor, make modifications to a capacitor, identify each of those modifications in an equivalent circuit identifying discrete capacitances, and measure the performance of the capacitor. (Doc. No. 331, Trial Tr. Vol. V at 189-90; Doc. No. 306, Trial Tr. Vol. III at 156-57.) Further, a PHOSITA would know how to make modifications to the capacitor to isolate discrete features of the capacitor, such as discrete capacitances including the fringe-effect capacitance. (Doc. No. 331, Trial Tr. Vol. V at 155-57, 189-90.) A PHOSITA would be able to measure the performance of the capacitor and confirm the impact of those discrete capacitances through and on insertion loss measurements. (Id. at 146, 155-57, 189-191, 194.) A PHOSITA would know, based on the impact of a discrete capacitance on the measurements, how to translate those measurements into an equivalent circuit diagram that

1 includes that discrete capacitance. (Id. at 190-91, 192-93.) A PHOSITA would then be
2 able to determine the capacitance, in terms of the standard unit of Farads, of each of those
3 discrete capacitances as distinguished from the entire capacitor. (Id. at 189-90.) Indeed,
4 ATC's own expert testified that if certain things were changed in a capacitor, a PHOSITA
5 would be able to measure the effect on the capacitor's total capacitance caused by that
6 change. (Doc. No. 330, Trial Tr. Vol. IV at 156; see also id. at 176-77 (testimony from
7 Mr. Anderson, an employee of non-party Keysight Technologies, Inc., explaining that a
8 network analyzer could be used to imply that a change had been made in a multilayer
9 ceramic capacitor.)

10 Importantly, Dr. Huebner testified that the fringe-effect capacitance between the
11 external contacts of a capacitor is one of the discrete capacitances that a PHOSITA would
12 be able to determine the specific capacitance of, in terms of the standard unit of Farads.⁶
13 (Doc. No. 306, Trial Tr. Vol. III at 177-78; Doc. No. 331, Trial Tr. Vol. V at 141-42, 192-
14 93; see also Doc. No. 306, Trial Tr. Vol. III at 39-64.) Thus, a PHOSITA would know the
15 necessary measurements to make on a multilayer capacitor to evaluate and conclude
16 whether the capacitor does or does not have a fringe-effect capacitance that is capable of
17 being determined by measurement in terms of a standard unit. (Doc. No. 306, Trial Tr.
18 Vol III at 156-58.) Accordingly, a PHOSITA would be able to use a network analyzer and
19 determine whether a particular capacitor falls inside or outside the scope of claim 1 of the
20 '356 patent. (Id. at 199.)

21 The Court finds Dr. Huebner's testimony credible. In particular, the Court notes Dr.
22 Huebner's extensive experience with multilayer ceramic capacitors, including his over 35
23 years of analyzing, researching, measuring, designing, and building such capacitors.⁷

25 ⁶ Dr. Huebner specifically testified that a PHOSITA would have been able to make this
26 determination as of 2002. (Doc. No. 306, Trial Tr. Vol. III at 180.)

27 ⁷ ATC's expert, Dr. Schaper, testified that the '356 patent does disclose when the claimed fringe-
28 effect capacitance would exist. (Doc. No. 331 Trial Tr. Vol. V at 39, 43, 95-96.) The Court does not
find ATC's expert credible on this issue in light of Dr. Huebner's conflicting testimony, which the Court

1 (Doc. No. 305, Trial Tr. Vol. II at 241; see also id. at 216-18, 224-33.) The Court
2 concludes, based on the evidence presented at trial, that the intrinsic record of the '356
3 patent discloses to a PHOSITA how to evaluate whether the fringe-effect capacitance
4 between the external contacts of a capacitor is capable of being determined in terms of a
5 standard unit. Accordingly, the asserted claims, when read in light of the intrinsic record,
6 inform a PHOSITA about the scope of the claims with reasonable certainty.

7 ATC argues that the intrinsic record does not disclose how to measure fringe-effect
8 capacitance between a capacitor's external contacts. (Doc. No. 341-2 at 4-9.) ATC is
9 incorrect. The specification of the '356 patent discloses the use of insertion loss
10 measurements. See '356 Patent at figs. 21A, 21B, 6:10-15, 7:3-18. Further, the
11 prosecution history explains that insertion loss measurements as referenced in figures 21A
12 and 21B are the proper method of measurement for showing the effects of the capacitance
13 formed according to the invention. (Doc. No. 212-2, Slonim Decl. Ex. 2 at 12.) Thus, the
14 intrinsic record discloses the relevant method of measurement. To the extent, ATC
15 contends that the intrinsic record fails to disclose the precise methods of measurement
16 utilized by Dr. Huebner is this case to measure fringe-effect capacitance, such extreme
17 detail is not required by Nautilus. Cf. 134 S. Ct. at 2129 (explaining that the definiteness
18 requirement "mandates clarity, while recognizing that absolute precision is unattainable").
19 Nautilus simply requires that the claims, when read in light of the intrinsic record, inform
20 a PHOSITA about the scope of the invention with reasonable certainty. Id. at 2124, 2129.
21 Dr. Huebner credibly testified that in light of the disclosures contained in the intrinsic
22 record of the '356 patent regarding insertion loss measurements, a PHOSITA would be
23 able to determine whether the fringe-effect capacitance between the external contacts of a
24 capacitor is capable of being determined in terms of a standard unit. This satisfies the

25 _____
26 does find credible. The Court notes that Dr. Schaper has not been engaged with multilayer ceramic
27 capacitors for over a decade, and he testified that most of his experience involved working with
28 capacitors that were not multilayer ceramic capacitors. (Id. at 75, 79-80.) In addition, Dr. Schaper
testified that he never attempted to isolate the capacitances of discrete features in a capacitors. (Id. at
76-77.)

1 Nautilus standard.

2 Further, the Court does not find persuasive ATC's reliance on the Federal Circuit's
3 recent decisions in Teva Pharm. USA, Inc. v. Sandoz, Inc., 789 F.3d 1335 (Fed. Cir. 2015)
4 and Dow Chem. Co. v. Nova Chemicals Corp. (Canada), 803 F.3d 620 (Fed. Cir. 2015).
5 (Doc. No. 341-2 at 9-12.) Teva and Dow both involved a situation where the parties agreed
6 that the claim term at issue could refer to any one of several different types of
7 measurements and that each method of measurement produced different results. See Teva,
8 789 F.3d at 1341; Dow, 803 F.3d at 633-34. In each of those cases, the Federal Circuit
9 found the claims at issue indefinite because the intrinsic record failed to disclose which of
10 the methods should be used. See Teva, 789 F.3d at 1342-45; Dow, 803 F.3d at 634-35. In
11 contrast, here, there is only one method of measurement disclosed in the intrinsic record of
12 the '356 patent – insertion loss measurements. ATC does not argue that there are other
13 methods of measurement that could potentially be used to determine the scope of the '356
14 patent.⁸

15 In addition, the Court rejects ATC's contention that in order to satisfy section 112's
16 definiteness requirement, the claim language of the '356 patent needs to have had a
17 "presumed meaning" in the art as of the patent's filing date. (Doc. No. 341-2 at 16-24.)
18 Nowhere in Nautilus, Teva, or Dow does the court ever hold that claim language must have
19 a "presumed meaning" in the art as of the patent's filing date in order to satisfy section
20 112's definiteness requirement. Rather, the standard for determining indefiniteness
21 remains the standard set forth in Nautilus: that in order to satisfy 112's definiteness
22 requirement, the claims, when viewed in light of the intrinsic record, must inform a
23

24 ⁸ In an effort to show that there are different tests for determining the scope of the asserted claims,
25 ATC points to the fact that Dr. Huebner utilized a different test in the prior litigation. (Doc. No. 341-2
26 at 24-25.) But this fact is of no consequence because, as ATC itself has argued and the Court accepted
27 in its absolute intervening rights ruling, the amendments to the asserted claims during the reexamination
28 proceedings that resulted in the December 8, 2015 reexamination certificate substantively changed the
scope of the claims – specifically, in regard to the claim language at issue here. (Doc. No. 234 at 28.)
Thus, Dr. Huebner's testimony in the prior litigation related to claims that were different in scope from
the claims asserted in this action.

1 PHOSITA about the scope of the invention with reasonable certainty. 134 S. Ct. at 2124,
2 2129. The evidence presented at trial showed that that this standard has been met here.
3 Moreover, both fringe-effect capacitance and insertion loss measurements were well
4 known to and understood by a PHOSITA as of the relevant date. (Doc. No. 306, Trial Tr.
5 Vol. III at 151-53; Doc. No. 331, Trial Tr. Vol. V at 78, 87.)

6 The Court also rejects ATC's argument that the claims are indefinite because there
7 is no set way to configure a network analyzer and different configurations could produce
8 different results. (Doc. No. 341-2 at 21-24.) Even assuming it is true that different
9 configurations produce different results, ATC has failed to show that such differences are
10 material to the Court's analysis. The asserted claims do not require that the fringe-effect
11 be determinable to a specific numerical value or range of values. Rather, claim 1 only
12 requires that the fringe-effect capacitance "is capable of being determined by measurement
13 in terms of a standard unit." '356 Patent Dec. 8, 2016 Reexamination Certificate at 1:35-
14 36. ATC has not shown that different test results would affect whether the capacitance is
15 capable of being determined in terms of a standard unit.

16 Finally, ATC also argues that the '356 patent is indefinite because interpreting
17 insertion loss data from a network analyzer, in combination with other information, is
18 entirely subjective. (Doc. No. 341-2 at 12-16.) The Court disagrees. The insertion loss
19 measurements disclosed in the patent and utilized by Dr. Huebner provided an objective
20 standard for determining the scope of the asserted claims. That a PHOSITA would need
21 to interpret some of the data during the process does not render the measurements entirely
22 subjective.

23 Moreover, in concluding that ATC has failed to prove indefiniteness by clear and
24 convincing evidence, the Court notes that the asserted claims in their current form
25 following amendment were all found to be patentable by the examiner at the conclusion of
26 the ex parte reexamination proceedings that resulted in the issuance of the December 8,
27 2015 reexamination certificate. See '356 Patent Dec. 8, 2016 Reexamination Certificate.
28 37 C.F.R. § 1.552(a) provides: "Claims in an ex parte reexamination proceeding will be

1 examined on the basis of patents or printed publications and, with respect to subject matter
2 added or deleted in the reexamination proceeding, on the basis of the requirements of 35
3 U.S.C. 112.” (See also Doc. No. 305, Trial Tr. Vol. II at 178-79, 184-85.) The precise
4 claim language that ATC contends renders the asserted claims indefinite is the same claim
5 language that was at issue and was specifically amended during the reexamination
6 proceedings. (See Doc. No. 212-2, Slonim Decl. Exs. 1, 2, 8, 11.) Therefore, under §
7 1.552(a), the examiner evaluated that claim language on the basis of the requirements in §
8 112, including definiteness, and found the amended claims patentable. Notably, the
9 examiner found the amended claims patentable in late 2015, well after the Supreme Court
10 issued its decision in Nautilus in June 2014. Further, the Court also notes that the jury in
11 this action rendered an advisory opinion finding that ATC failed to prove by clear and
12 convincing evidence that claim 1 of the ’356 patent is indefinite.⁹ (Doc. No. 328 at 5.)
13 Although the jury’s advisory verdict is not binding on the Court, see Am. Calcar, Inc. v.
14 Am. Honda Motor Co., 651 F.3d 1318, 1333-34 (Fed. Cir. 2011), the Court notes that the
15 jury resolved the factual disputes between the parties with respect to indefiniteness in
16 Presidio’s favor.

17 In sum, ATC has failed to show by clear and convincing evidence that the asserted
18 claims of the ’356 patent are indefinite. Accordingly, the Court denies ATC’s motion for
19 the entry of judgment its favor on its affirmative defense and counterclaim that all of the
20 asserted claims of the ’356 patent are invalid due to indefiniteness.

21 **III. Equitable Intervening Rights**

22 ATC moves for the entry of judgment in its favor on its affirmative defense of
23 equitable intervening rights. (Doc. No. 349 at 2-17.) The doctrine of intervening rights
24 was developed by courts to remedy the potential injustice “where a third party, having
25 already begun to make, use, or sell a given article, finds its previously lawful activities
26

27
28 ⁹ The Court properly instructed the jury as to the legal standard for indefiniteness under Nautilus.
(Doc. No. 327 at 57-58.)

1 rendered newly infringing under a modified patent.” Marine Polymer Techs., Inc. v.
2 HemCon, Inc., 672 F.3d 1350, 1361 (Fed. Cir. 2012) (en banc). In such situations, the
3 accused infringer should be deemed to have “‘acquired at least a right to continue to use
4 the [articles] as if it held a license therefor under the reissued patent.’” Id. (quoting Sontag
5 Chain Stores Co. v. Nat’l Nut Co., 310 U.S. 281, 294-95 (1940)). There are two types of
6 intervening rights: “(1) intervening rights that abrogate liability for infringing claims
7 added to or modified from the original patent if the accused products were made or used
8 before the reissue, often referred to as absolute intervening rights; and (2) intervening rights
9 that apply as a matter of judicial discretion to mitigate liability for infringing such claims
10 even as to products made or used after the reissue if the accused infringer made substantial
11 preparations for the infringing activities prior to reissue, often referred to as equitable
12 intervening rights.” Marine Polymer, 672 F.3d at 1361-62 (citing 35 U.S.C. § 252).

13 The Federal Circuit has explained that when a patent emerges from a reexamination
14 proceeding, any “amended or new” claims in the reexamined patent are potentially
15 susceptible to intervening rights. Marine Polymer, 672 F.3d at 1362 (citing 35 U.S.C. §§
16 307(b), 316(b)); see also id. at 1363 (“[O]nly ‘amended or new’ claims incorporated into a
17 patent during reexamination . . . will be susceptible to intervening rights.”). But intervening
18 rights only accrue where a substantive change has been made to the scope of the claims
19 during the reexamination. See id. at 1362; R+L Carriers, Inc. v. Qualcomm, Inc., 801 F.3d
20 1346, 1349 (Fed. Cir. 2015). Intervening rights do not apply where “the original and the
21 reexamined claims are ‘substantially identical.’” R+L Carriers, 801 F.3d at 1349. In
22 granting ATC’s motion for summary judgment of its affirmative defense of absolute
23 intervening rights, the Court held that the amendments contained in the December 8, 2015
24 reexamination certificate narrowed the scope of the asserted claims, and, therefore, a
25 substantive change was made to the original claims during the reexamination, making
26 intervening rights applicable in the present case. (Doc. No. 234 at 28.)

27 In determining whether to grant equitable intervening rights to a party, a court “may
28 consider various factors” including:

(1) whether “substantial preparation” was made by the infringer before the reissue; (2) whether the infringer continued manufacturing before reissue on advice of its patent counsel; (3) whether there were existing orders or contracts; (4) whether non-infringing goods can be manufactured from the inventory used to manufacture the infringing product and the cost of conversion; (5) whether there is a long period of sales and operations before the patent reissued from which no damages can be assessed; and (6) whether the infringer has made profits sufficient to recoup its investment.

Visto Corp. v. Sproqit Techs., Inc., 413 F. Supp. 2d 1073, 1090 (N.D. Cal. 2006) (citing Seattle Box Co. v. Industrial Crating & Packing, Inc., 756 F.2d 1574, 1579 (Fed. Cir. 1985)); accord 2-Way Computing, Inc. v. Sprint Nextel Corp., No. 2:11-CV-12 JCM PAL, 2014 WL 2960455, at *5-6 (D. Nev. June 27, 2014). Further, “[t]he court may consider other factors, such as the relative degrees of good or bad faith exercised by the parties.” 2-Way Computing, 2014 WL 2960455, at *5; see Shockley v. Arcan, Inc., 248 F.3d 1349, 1361 (Fed. Cir. 2001).

In determining whether to grant equitable intervening rights, “the court must consider whether to use its broad equity powers to fashion an appropriate remedy.” Seattle Box, 756 F.2d at 1579. The ultimate decision of whether to grant equitable intervening rights is committed to the discretion of the district court. See Shockley, 248 F.3d at 1361; see also A.C. Aukerman Co. v. R.L. Chaides Constr. Co., 960 F.2d 1020, 1028 (Fed. Cir. 1992) (en banc) (explaining that equitable defenses are committed to the sound discretion of the trial judge).

In evaluating the above factors, the Court recognizes that some of the factors weigh in favor of ATC. At the time the reexamination certificate issued, ATC had made preparations and investments into the research, development, marketing, and sales of the 550 line of capacitors. (See Doc. No. 349-1, Slavitt Decl. ¶¶ 12-20.) ATC also had existing orders and contracts for the 550 capacitors at that time. (See Doc. No. 349-1, Slavitt Decl. ¶ 24; Doc. No. 349-4, Slonim Decl. Ex. 9 at 7.) In addition, prior to issuance of the reexamination certificate, ATC had relied on the non-infringement and invalidity position taken by counsel in this litigation. (See Doc. No. 349-1, Slavitt Decl. ¶ 23.)

1 But other factors weigh against the Court granting ATC equitable intervening rights
2 in this action that the Court finds compelling. First, ATC experienced a long period of
3 sales and operations for the accused products prior to the issuance of the reexamination
4 certificate – a period of almost six years – which resulted in over \$17 million in revenue
5 and for which no damages can be assessed.¹⁰ (See Doc. No. 276-3 ¶ 3; Doc. No. 349-1,
6 Slavitt Decl. ¶¶ 2, 12, 24; Doc. No. 349-2, Slonim Decl. Ex. 2 at 12.) Second, ATC asserts
7 that it has not made profits sufficient to recoup its investment into the 550 series of
8 capacitors, (see Doc. No. 349 at 3-6; 363 at 5-6), but ATC has failed to provide the Court
9 with sufficient evidence to prove this assertion. Importantly, ATC has failed to identify
10 what profits it has generated from the accused products. See Revolution Eyewear, 2008
11 WL 6873811, at *8 (finding that this factor weighs against granting equitable intervening
12 rights where the defendant has failed to provide evidence showing its profits). ATC simply
13 points to various costs it has purportedly incurred and notes the revenue it has generated
14 from the 550 capacitors. (Doc. No. 349 at 3-6; Doc. No. 349-2, Slonim Decl. Ex. 2 at 12.)
15 Third, ATC asserts that the existing inventory of 550 capacitors cannot be repurposed for
16 non-infringing goods, but ATC has failed to provide Court with sufficient credible
17 evidence supporting this assertion. Finally, the Court finds relevant and significant the fact
18 that the parties are direct competitors and have been for many years. Accordingly,
19 balancing the equities in the present case and exercising its sound discretion, the Court
20 declines to grant ATC equitable intervening rights.

21 In addition, the Court declines to grant ATC equitable intervening rights because the
22 jury found that ATC's infringement in the present case was willful.¹¹ See Shockley, 248
23

24 ¹⁰ The Court agrees with Presidio that, contrary to ATC's assertion, a long period of sales and
25 operations from which no damages can be assessed weighs against, not in favor of, granting equitable
26 intervening rights. See Revolution Eyewear, Inc. v. Aspex Eyewear, Inc., No. CV02-01087VAPCW, 2008 WL 6873811, at *8 (C.D. Cal. Jan. 3, 2008).

27 ¹¹ ATC argues that the Supreme Court's recent decision in decision in Halo Elecs., Inc. v. Pulse
28 Elecs., Inc., No. 14-1513, 579 U.S. __ (June 13, 2016) rendered the jury's finding of subjective
willfulness void. (Doc. No. 363 at 1.) The Court disagrees. Nowhere in Halo does the Supreme Court

1 F.3d at 1361 (explaining that a finding of willful infringement is sufficient by itself to
 2 support a decision to deny a defendant equitable intervening rights). Accordingly, the
 3 Court denies ATC's motion for the entry of judgment in its favor on its affirmative defense
 4 of equitable intervening rights.

5 **IV. Equitable Estoppel**

6 ATC moves for the entry of judgment in its favor on its affirmative defense of
 7 equitable estoppel. (Doc. No. 349 at 18-26.) To prove the affirmative defense of equitable
 8 estoppel, a defendant must show: "(1) the patentee, through misleading conduct, led the
 9 alleged infringer to reasonably believe that the patentee did not intend to enforce its patent
 10 against the infringer; (2) the alleged infringer relied on that conduct; and (3) due to its
 11 reliance, the alleged infringer would be materially prejudiced if the patentee were permitted
 12 to proceed with its charge of infringement." Aspex Eyewear, 605 F.3d at 1310; accord
 13 A.C. Aukerman, 960 F.2d at 1028. "Misleading 'conduct' may include specific statements,
 14 action, inaction, or silence when there was an obligation to speak." Aspex Eyewear, 605
 15 F.3d at 1310. Material prejudice supporting an equitable estoppel defense "may be a
 16 change of economic position or loss of evidence." A.C. Aukerman, 960 F.2d at 1043.

17 Equitable estoppel must be proven by a preponderance of the evidence. A.C.
 18 Aukerman, 960 F.2d at 1046. Whether the defendant has established the required elements
 19 of its equitable estoppel defense is a question of fact. See SCA Hygiene Products
 20 Aktiebolag v. First Quality Baby Products, LLC, 767 F.3d 1339, 1344 (Fed. Cir. 2014),
 21 cert. granted on other grounds, 136 S. Ct. 1824 (2016); see also Hemstreet, 972 F.2d at
 22 1292 (explaining that the defense of equitable estoppel "ultimately turn[s] on underlying
 23 factual determinations"). However, the ultimate decision of whether to bar a claim of
 24 patent infringement under equitable estoppel is committed to the sound discretion of the
 25 trial court. A.C. Aukerman, 960 F.2d at 1041; see also id. ("[E]quitable estoppel is not
 26 _____

27 hold that a jury may not make a finding as to subjective willfulness. See infra. Accordingly, the jury's
 28 finding of willful infringement by ATC remains a valid basis for denying ATC's equitable intervening
 rights affirmative defense.

1 limited to a particular factual situation nor subject to resolution by simple or hard and fast
2 rules.”).

3 The Court concludes that ATC has failed to establish the first element of its equitable
4 estoppel defense – that Presidio, through misleading conduct, led the ATC to reasonably
5 believe that it did not intend to enforce the ’356 patent against the 550 capacitors. In an
6 effort to satisfy this element of the test, ATC relies on two specific actions taken by
7 Presidio. But neither action could have reasonably led one to believe that Presidio did not
8 intend to enforce the ’356 patent against ATC’s 550 capacitors.

9 First, ATC relies on settlement negotiations that occurred between the parties in late
10 2009. During the negotiations, a proposed settlement agreement was drafted containing a
11 covenant not to sue for the 550L capacitors and “Permitted Capacitors.” (Doc. No. 349-
12 13, Slonim Decl. Ex. 20 at § 5.) The proposed agreement provided that “a capacitor will
13 not be deemed a Permitted Capacitor if it incorporates a gap width between external
14 electrodes or external plates of less than 7 mils, with a +/- 2 mil tolerance. (*Id.*) ATC
15 concedes that the proposed settlement agreement was never executed by the parties. (Doc.
16 No. 349 at 20.) Nevertheless, ATC argues that although the proposed agreement was never
17 executed, it could reasonably rely on the above provisions to believe that Presidio would
18 not assert the ’356 patent against the 550 capacitors because the settlement negotiations
19 between the parties purportedly broke down due to a different issue. (*Id.* at 19-21.) The
20 Court disagrees.

21 It is not reasonable for a party in contract negotiations to attempt to rely on terms
22 contained in a proposed agreement when the contract was never executed and no agreement
23 between the parties was ever reached. Because the proposed settlement agreement was
24 never executed by the parties, Presidio was not bound by any of the terms in the proposed
25 agreement, including the proposed covenant not to sue. Because Presidio was not bound
26 by the proposed covenant not to sue, Presidio did not engage in misleading conduct when
27 it filed the present action alleging infringement of the ’356 patent by ATC’s 550 capacitors.
28 Moreover, because no binding agreement was reached, it was unreasonable for ATC to rely

1 on any of the terms contained in the proposed covenant not to sue regardless of the specific
2 reasons why the agreement was never executed. Cf. Goodyear Tire & Rubber Co. v. Chiles
3 Power Supply, Inc., 332 F.3d 976, 981 (6th Cir. 2003) (noting “the inherent questionability
4 of the truthfulness of any statements made” during settlement negotiations). Accordingly,
5 the evidence related to the late 2009 settlement negotiations is insufficient to satisfy the
6 first element of ATC’s equitable estoppel defense.¹²

7 Second, ATC relies on Presidio’s request for an accounting of the sales of the 550
8 series of capacitors during the prior litigation. In the request, Presidio stated that it was its
9 understanding that ATC did not contend that the design changes made to the 545L
10 capacitor – the accused product in the prior litigation – to arrive at the 550L capacitor took
11 the 550L outside the scope of the ongoing royalty in that case. (Doc. No. 349-15, Slonim
12 Decl. Ex. 22.) In ATC’s response to Presidio’s request for an accounting, ATC argued that
13 the 550L capacitor was “an entirely new, independent design” that was not within the scope
14 of the ongoing royalties in that case and denied Presidio’s request. (Doc. No. 349-16,
15 Slonim Decl. Ex. 23.) ATC asserts that Presidio never responded to its letter. (Doc. No.
16 349 at 21.) ATC argues that Presidio’s four years of silence after ATC’s refusal to provide
17 an accounting for the 550L capacitors reasonably led ATC to believe that Presidio would
18 not accuse the 550 series of capacitors of infringing the ’356 patent. (Id. at 22.) The Court
19 disagrees.

20 It was unreasonable for ATC to infer from this correspondence that Presidio would
21

22 ¹² In addition, the Court does not find persuasive ATC’s reliance on testimony from Mr. Slavitt
23 stating that during the negotiations, “Presidio conceded that the 550 was not an infringing product.”
24 (Doc. No. 349 at 20 (citing Doc. No. 349-3, Slonim Decl. Ex. 3 at 28).) Mr. Slavitt qualified this
25 statement and explained that it was based on his own understanding of what he thought was being
26 represented during the settlement negotiations. (Doc. No. 349-3, Slonim Decl. Ex. 3 at 28-29.) Further,
27 Mr. Slavitt conceded that he was not directly involved in the settlement discussions at issue and that
28 Presidio and its counsel never made any direct representations to him on this issue. (Id. at 29-30.)
Accordingly, the Court gives Mr. Slavitt’s testimony no weight. Moreover, Mr. Devoe states that he
was involved in the 2009 settlement negotiations and at no time during the settlement negotiations did
Presidio take the position that the 550 capacitors do not infringe the ’356 patent. (Doc. No. 353-4,
Devoe Decl. ¶¶ 10-12.)

1 not accuse the 550 capacitors of infringing the '356 patent. Nowhere in the correspondence
2 does Presidio state that the 550 capacitors are non-infringing products or that it does not
3 intend to assert its patents against the 550 capacitors. Further, nowhere in the
4 correspondence does ATC itself assert that the 550L capacitor is a non-infringing
5 product.¹³ Rather, ATC merely asserted that the product was outside the scope of the
6 ongoing royalty in the prior litigation. (Doc. No. 349-16, Slonim Decl. Ex. 23.) Therefore,
7 at best, ATC could only reasonably infer from this correspondence that Presidio was not
8 disputing ATC's contention that the 550 capacitors were outside the scope of the royalty
9 in the prior action. That the products were outside the scope of the royalty in the prior
10 action because they were a new, independent design does not necessary mean that the
11 products do not infringe the '356 patent. Accordingly, ATC has failed to establish that
12 Presidio engaged in any misleading conduct or that it was reasonable for ATC to believe
13 that the 550 capacitors were non-infringing products based on any of Presidio's actions.

14 In sum, ATC has failed to establish the first element of its equitable estoppel
15 affirmative defense. In addition, the Court notes that ATC's evidence as to the second
16 element of its defense is very weak as it consists of a single conclusory statement from its
17 in-house counsel, Mr. Slavitt, stating that ATC relied on Presidio's conduct in deciding to
18 expand the 550 product line. (See Doc. No. 349 at 22-23 (citing Doc. No. 349-3, Slonim
19 Decl. Ex. 3).) Accordingly, exercising its sound discretion, the Court denies ATC's motion
20 for the entry of judgment in its favor on its affirmative defense of equitable estoppel.

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22 ¹³ That the parties' correspondence contained no specific discussion about whether the 550L
23 capacitor infringed the '356 patent renders the present case distinguishable from Aspex Eyewear Inc. v.
24 Clariti Eyewear, Inc., 605 F.3d 1305 (Fed. Cir. 2010). In Aspex, the plaintiff issued a threat of a suit for
25 patent infringement against the defendant, and the defendant responded by stating that it did not believe
26 that its products infringed any of the claims of the patents at issue, which was then followed by three
years of silence by the plaintiff. See id. at 1308-11. In contrast, here, there was no threat of a suit for
patent infringement by Presidio, and there was no response from ATC asserting that its 550 capacitor is
a non-infringing product.

27 At the hearing, ATC contended that in November 2009, it went to Presidio with the 550
28 capacitor and asserted that it was a non-infringing product. But ATC has failed to point to any evidence
in the record showing that this interaction occurred.

1 **V. Laches**

2 ATC moves for the entry of judgment in its favor on its affirmative defense of laches.
 3 (Doc. No. 349 at 26-28.) To prevail on a defense of laches in a patent case, a defendant
 4 must prove: (1) that the patentee delayed filing suit for an unreasonable and inexcusable
 5 length of time from the time it knew or reasonably should have known of its claim against
 6 the defendant, and (2) the delay operated to the prejudice or injury of the defendant.¹⁴ A.C.
 7 Aukerman, 960 F.2d at 1032. The defense of laches, if proven, bars the recovery of
 8 damages accrued prior to the filing of suit. See id. at 1040-41; Odetics, Inc. v. Storage
 9 Tech. Corp., 185 F.3d 1259, 1272 (Fed. Cir. 1999). It does not bar the recovery of post-
 10 filing damages. See Aukerman, 960 F.2d at 1040.

11 In its motion, ATC concedes that the Court's order granting summary judgment of
 12 ATC's affirmative defense of absolute intervening rights renders its laches defense moot.¹⁵
 13 (Doc. No. 349 at 26 n.2.) In granting ATC's motion for summary judgment of its
 14 affirmative defense of absolute intervening rights, the Court held that Presidio is entitled
 15 to infringement damages only for the time period following the issuance of the December
 16 8, 2015 reexamination certificate. (Doc. No. 234 at 28.) Because after that ruling, there
 17 are no pre-suit damages at issue in the case, ATC's affirmative defense of laches is moot.
 18 Cf. A.C. Aukerman, 960 F.2d at 1040-41. Accordingly, the Court denies as moot ATC's
 19 motion for the entry of judgment in its favor on its affirmative defense of laches.

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 23
 24 ¹⁴ The Court notes that the Supreme Court recently granted a petition for writ of certiorari on the
 25 following issue: "Whether and to what extent the defense of laches may bar a claim for patent
 26 infringement brought within the Patent Act's six-year statutory limitations period, 35 U.S.C. § 286."
SCA Hygiene Prods. Aktiebolag v. First Quality Baby Prods., LLC, 807 F.3d 1311 (Fed. Cir. 2015) (en
 banc), cert granted, No. 15-927, ___ S. Ct. ___, 2016 WL 309607, at *1 (U.S. May 2, 2016).

27 ¹⁵ ATC clarifies that although its laches defense is moot, it is presenting facts and arguments
 28 regarding its laches defense to preserve the defense in the event that the Court's absolute intervening
 rights ruling is reversed. (Doc. No. 349 at 26 n.13.)

1 **VI. Willful Infringement**

2 ATC moves for a finding of no willful infringement. (Doc. No. 343-1.) 35 U.S.C.
3 § 284 allows a court to enhance a prevailing plaintiff's damage award "up to three times
4 the amount found or assessed." 35 U.S.C. § 284.

5 At the time the jury rendered its verdict, the Federal Circuit had held "that an award
6 of enhanced damages [under section 284] requires a showing of willful infringement." In
7 re Seagate Tech., LLC, 497 F.3d 1360, 1368 (Fed. Cir. 2007) (en banc).

8 To establish willful infringement, the patentee has the burden of showing "by
9 clear and convincing evidence that the infringer acted despite an objectively
10 high likelihood that its actions constituted infringement of a valid patent."
11 "The state of mind of the accused infringer is not relevant to this objective
12 inquiry." Only if the patentee establishes this "threshold objective standard"
13 does the inquiry then move on to whether "this objectively-defined risk
(determined by the record developed in the infringement proceeding) was
14 either known or so obvious that it should have been known to the accused
infringer."

15 Bard Peripheral Vascular, Inc. v. W.L. Gore & Associates, Inc., 776 F.3d 837, 844 (Fed.
16 Cir. 2015) (quoting Seagate, 497 F.3d at 1371). The Federal Circuit further held that the
17 objective prong of the willfulness test is to be decided by the Court as a matter of law;
18 while the subjective prong of the test is a question of fact. See Bard Peripheral Vascular,
19 Inc. v. W.L. Gore & Associates, Inc., 682 F.3d 1003, 1006-08 (Fed. Cir. 2012).

20 On June 13, 2016, the Supreme Court issued its decision in Halo Elecs., Inc. v. Pulse
21 Elecs., Inc., No. 14-1513, 579 U.S. __ (June 13, 2016). In Halo, the Supreme Court
22 rejected the Federal Circuit's two-part test from Seagate for determining when a district
23 court may award enhanced damages as inconsistent with § 284. Id., slip op. at 1-2. The
24 Supreme Court explained that § 284 commits the award of enhanced damages to the
25 discretion of the district court. See id. at 8, 12-13, 15. The Supreme Court further
26 explained that the Seagate test is "'unduly rigid'" and "'impermissibly encumbers'" a
27 district court's discretion, particularly its requirement that there must be a finding of
28 objective recklessness in every case before a district court may award enhanced damages.

1 Id. at 9. “The subjective willfulness of a patent infringer, intentional or knowing, may
2 warrant enhanced damages, without regard to whether his infringement was objectively
3 reckless.” Id. at 10. “Section 284 permits district courts to exercise their discretion in a
4 manner free from the inelastic constraints of the Seagate test.” Id. at 11.

5 The Supreme Court explained that although “[d]istrict courts enjoy discretion in
6 deciding whether to award enhanced damages, and in what amount”, that discretion is not
7 without limits. Id. at 8. Enhanced damages are generally appropriate under § 284 only in
8 “egregious cases” of misconduct beyond typical infringement and should not be awarded
9 in “garden-variety cases.” See id. at 9, 11, 15. “The sort of conduct warranting enhanced
10 damages has been variously described . . . as willful, wanton, malicious, bad-faith,
11 deliberate, consciously wrongful, flagrant, or – indeed – characteristic of a pirate.” Id. at
12 8.

13 Finally, in Halo, the Supreme Court explained that enhanced damages need only be
14 proven by a preponderance of the evidence, not clear and convincing evidence. Id. at 12.
15 And a district court’s determination of whether to award enhanced damages is reviewed
16 for abuse of discretion on appeal. Id. at 13.

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1 In the present case, the Court instructed the jury as to willful infringement.¹⁶ The
2 Court's instruction was limited to the issue of subjective willfulness and did not address
3 objective willfulness. The jury then found by clear and convincing evidence that ATC's
4 infringement of the '356 patent was willful. (Doc. No. 328 at 4.)

5 ATC argues that in light of the Supreme Court's decision in Halo, the jury's verdict
6 as to willfulness is void and should be disregarded. (Doc. No. 361 at 1.) The Court
7

8 ¹⁶ The Court provided the following jury instruction as to willful infringement:

9 In this case, Presidio also argues that ATC willfully infringed Presidio the '356
10 patent

11 To prove willful infringement against ATC, Presidio must first persuade you that
12 ATC infringed a valid and enforceable claim of Presidio's asserted patent. The
13 requirements for proving such infringement were discussed in my prior instructions. In
14 addition, to prove willful infringement, Presidio must persuade you by clear and
15 convincing evidence that on or after December 8, 2015, ATC acted with reckless
16 disregard of the claims of the patent holder's patent. When a party has the burden of
proving something by clear and convincing evidence, it means you must be persuaded by
the evidence that the claim or defense is highly probable. This is a higher standard of
proof than proof by a preponderance of the evidence.

17 To demonstrate such "reckless disregard," Presidio must persuade you that ATC
18 actually knew, or it was so obvious that ATC should have known, that its actions
19 constituted infringement of a valid patent. In deciding whether ATC acted with reckless
20 disregard for Presidio's asserted patents, you should consider all of the facts surrounding
21 the alleged infringement including, but not limited to, the following factors:

22 1. Whether ATC acted in a manner consistent with the standards of commerce for
23 its industry;

24 2. Whether ATC intentionally copied a product of Presidio covered by the
25 patents;

26 3. Whether there is a reasonable basis to believe that ATC did not infringe or had
27 a reasonable defense to infringement, including a belief that the patent-in-suit is invalid;

28 4. Whether ATC made a good-faith effort to avoid infringing the patent, for
example, whether ATC attempted to design around the patent;

5. Whether ATC tried to cover up its alleged infringement.

(Doc. No. 327 at 35-36.)

1 disagrees. ATC is correct that in Halo, the Supreme Court held that the ultimate decision
2 of whether to award enhanced damages and in what amount is committed to the sound
3 discretion of the trial court. See Halo, slip op. at 8, 12-13, 15. But there is no language in
4 Halo holding that a finding as to whether the infringement was willful must be made by
5 the Court. Nor is there any language in the Halo decision holding that a jury may not make
6 a finding as to subjective willfulness. Indeed, the Federal Circuit has historically held that
7 a finding of willfulness is a question of fact. See Bard, 682 F.3d at 1006. The Federal
8 Circuit has further held that only the determination of whether the infringement was
9 objective reckless is a question of law to be decided by the Courts. Id. at 1007. And a
10 determination as to objective recklessness is no longer a prerequisite for an award of
11 enhanced damages. See Halo, slip op. at 9. Accordingly, the Court properly permitted the
12 jury to issue a finding as to whether ATC's infringement was willful and the jury's finding
13 as to this issue is not void.

14 ATC also notes that the jury only made a finding as to subjective willfulness and did
15 not make a finding as to objective willfulness. (Doc. No. 361 at 1-3.) But this is of no
16 consequence because, after Halo, a finding as to objective recklessness is no longer
17 necessary to support an award of enhanced damages. See slip op. at 10 ("The subjective
18 willfulness of a patent infringer, intentional or knowing, may warrant enhanced damages,
19 without regard to whether his infringement was objectively reckless."). In sum, the jury
20 found that ATC's infringement of the '356 patent was willful, and ATC has failed to
21 provide the Court with a valid basis for disregarding the jury's finding. Indeed, the Court
22 notes that the jury found willful infringement by clear and convincing evidence – a higher
23 burden of proof than is required after Halo. See slip op. at 12. Accordingly, the Court
24 declines to issue a finding of no willful infringement and denies ATC's motion for a finding
25 by the Court of no willful infringement.

26 Nevertheless, the ultimate determination of whether to award enhanced damages is
27 committed to the discretion of the district court. Halo, slip op. at 8, 12-13, 15. In exercising
28 this discretion, a district court should take into account the particular circumstances of the

1 case in deciding whether to award enhanced damages, and Presidio intends to seek
2 enhanced damages under the recently announced Halo standard after the Court issues
3 judgment. See id. at 11. Accordingly, the Court defers the ultimate decision of whether to
4 award enhanced damages in this action until Presidio brings a motion following entry of
5 judgment.

6 **VII. Issues Tried to the Court**

7 To the extent that any of the issues were reserved for the Court to try, the Court set
8 a post-trial evidentiary hearing for April 29, 2016. (Doc. No. 322.) The parties then agreed
9 to submit the issues to the Court based on written briefing without further evidence taken
10 in Court. (Doc. Nos. 334, 335.)

11 Having heard and considered all the evidence in this case including the briefing and
12 arguments of the parties, the Court finds in favor of Plaintiff on the issues submitted to the
13 Court, and adopts this order as its memorandum decision on those issues, including
14 indefiniteness, equitable intervening rights, equitable estoppel, and laches. See Fed. R.
15 Civ. P. 52. Accordingly, the Court enters judgment in favor of Presidio and against ATC
16 on those issues.

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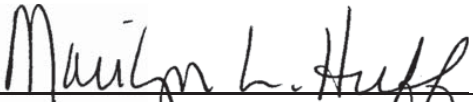
Conclusion

For the reasons above, the Court:

1. Denies ATC's Rule 50(a) motion for judgment as matter of law without prejudice to ATC filing a renewed motion under Rule 50(b);
2. Denies ATC's motion for the entry of judgment in its favor on its affirmative defense and counterclaim that the asserted claims of the '356 patent are invalid due to indefiniteness;
3. Denies ATC's motion for the entry of judgment in its favor on its equitable affirmative defenses of equitable intervening rights, equitable estoppel, and laches;
4. Denies ATC's motion for a finding by the Court of no willful infringement; and
5. Finds in favor of Presidio and against ATC on trial issues reserved for the Court.

IT IS SO ORDERED.

DATED: June 17, 2016


MARILYN L. HUFF, District Judge
UNITED STATES DISTRICT COURT

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**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA**

PRESIDIO COMPONENTS, INC.,
Plaintiff,
v.
AMERICAN TECHNICAL CERAMICS
CORP.,
Defendant.

Case No.: 14-cv-02061-H-BGS

ORDER:

**(1) DENYING DEFENDANT'S
MOTIONS FOR JUDGMENT AS A
MATTER OF LAW AND FOR A
NEW TRIAL;**

[Doc. Nos. 399, 400, 402.]

**(2) GRANTING PLAINTIFF'S
MOTION FOR A PERMANENT
INJUNCTION;**

[Doc. No. 373.]

**(3) DENYING PLAINTIFF'S
MOTION FOR ENHANCED
DAMAGES AND ATTORNEY'S
FEES; AND**

[Doc. No. 377.]

**(4) GRANTING PLAINTIFF'S
MOTION FOR SUPPLEMENTAL
DAMAGES AND INTEREST**

[Doc. No. 372.]

On June 22, 2016, Plaintiff Presidio Components, Inc. filed (1) a motion for a permanent injunction; (2) a motion for enhanced damages and attorney's fees; and (3) a motion for supplemental damages and interest. (Doc. Nos. 372, 373, 377.) On July 13, 2016, Defendant American Technical Ceramics Corp. filed its responses in opposition to Presidio's three motions. (Doc. Nos. 391, 393, 394.) On July 20, 2016, Presidio filed its replies in support of its motions. (Doc. Nos. 412, 414, 415.)

On July 15, 2016, ATC filed (1) a motion for judgment as a matter of law and new trial of no infringement; (2) a motion for judgment as a matter of law and new trial of no willfulness and no induced infringement; and (3) a motion for judgment as a matter of law and new trial of no lost profits. (Doc. Nos. 399, 400, 402.) On July 29, 2016, Presidio filed its responses in opposition to ATC's three motions. (Doc. Nos. 423, 424, 426.) On August 5, 2016, ATC filed its replies in support of its motions. (Doc. Nos. 432, 433, 434.)

The Court held a hearing on the matters on August 17, 2016. Gregory Ahrens and Brett Schatz appeared for Presidio. Peter Snell and Ronald Cahill appeared for ATC. For the reasons below, the Court: (1) denies ATC's motions for judgment as a matter of law and new trial; (2) grants Presidio's motion for a permanent injunction; (3) denies Presidio's motion for enhanced damages and attorney's fees; and (4) grants Presidio's motion for supplemental damages and interest.

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Background

On September 2, 2014, Presidio filed a complaint for patent infringement against ATC, alleging infringement of U.S. Patent No. 6,816,356 (“the ’356 patent”). (Doc. No. 1, Compl.) The ’356 patent is entitled “Integrated Broadband Ceramic Capacitor Array.” U.S. Patent No. 6,816,356 B2, at 1:1-2 (filed Apr. 14, 2003). The patent issued on November 9, 2004 and claimed priority to an application filed on May 17, 2002. See id. (See Doc. No. 276-3 ¶ 4; Doc. No. 356-1 at 5.)

A capacitor is a passive electrical component that stores and releases energy and is used in a variety of electrical devices. Presidio Components, Inc. v. American Technical Ceramics Corp., 702 F.3d 1351, 1355 (Fed. Cir. 2012). Generally, a capacitor comprises two parallel metal plates separated by a non-conductive material such as ceramic or air, known as a dielectric. Id. When a capacitor is connected to a power source, electricity passes through the metal plates, but not the dielectric, causing a positive charge to accumulate on one plate and a negative charge on the other. Id. “The capacitor may release this stored energy by connecting the two plates through a conductive path that closes the circuit.” Id. “The amount of energy a capacitor can store is its ‘capacitance.’” Id.

Multiple capacitors may be combined to create a “multilayer capacitor.” Id. A multilayer capacitor is made of several layers of conductive and non-conductive materials stacked together. Id. Each layer in the multilayer capacitor has its own electrical properties affecting the overall performance of the capacitor. Id.

The ’356 patent claims a multilayer capacitor design and teaches a multilayer integrated network of capacitors electrically connected in series and in parallel. Id.; Presidio Components, Inc. v. American Technical Ceramics Corp., 723 F. Supp. 2d 1284, 1289 (S.D. Cal. 2010), vacated on other grounds, 702 F.3d 1351 (Fed. Cir. 2012). This network of capacitors is disposed within a “substantially monolithic dielectric body,” as shown below in Figure 10A. Presidio, 702 F.3d at 1355. The claimed multilayer capacitor creates capacitance between internal parallel plate combinations 10 and 11 while simultaneously creating fringe-effect capacitance between external contacts 72 and 74. Id.

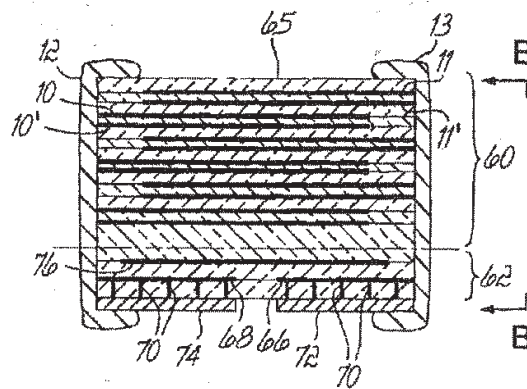


FIG. 10A

On December 8, 2015, the United States Patent and Trademark Office issued a reexamination certificate for the '356 patent, amending certain claims of the patent.¹ (Doc. No. 170-2, FAC Ex. 2.) Amended claim 1 of the '356 patent, the only independent claim asserted by Presidio in this action, is as follows:

1. A capacitor comprising:

a substantially monolithic dielectric body;

a conductive first plate disposed within the dielectric body;

a conductive second plate disposed within the dielectric body and forming a capacitor with the first plate;

a conductive first contact disposed externally on the dielectric body and electrically connected to the first plate; and

a conductive second contact disposed externally on the dielectric body and electrically connected to the second plate, and the second contact being located sufficiently close to the first contact in an edge to edge relationship in such proximity as to form a first fringe-effect capacitance with the first contact that is capable of being determined by measurement in terms of a standard unit.

¹ The PTO previously issued a reexamination certificate for the '356 patent on September 13, 2011. (Doc. No. 170-1, FAC Ex. 1.) This reexamination certificate did not alter any of the claims at issue in the present action. (*Id.*)

1 U.S. Patent No. 6,816,356 C2, at 1:23-36 (Reexamination Certificate filed Dec. 8, 2015)
2 (emphasis removed from original). The claims in the reexamination certificate were
3 amended in order to overcome a final rejection by the PTO examiner, rejecting the claims
4 at issue as anticipated by the AVX MLC Catalog reference, and in the alternative, as
5 obvious over the AVX MLC Catalog reference in view of the Ceramic Capacitor
6 Technology reference. (See Doc. No. 212-2, Slonim Decl. Exs. 1, 2, 8, 11.)

7 On December 22, 2015, Presidio filed a first amended complaint, alleging
8 infringement of the '356 patent as amended by the reexamination certificate. (Doc. No.
9 170, FAC.) Specifically, Presidio alleged that ATC's 550 line of capacitors infringes
10 claims 1, 3, 5, 16, 18, and 19 of the '356 patent. (Id. ¶ 26.) On December 22, 2015, ATC
11 filed a second amended answer and counterclaims to the first amended complaint, adding
12 an affirmative defense of absolute and equitable intervening rights and an affirmative
13 defense and counterclaim of unenforceability due to inequitable conduct. (Doc. No. 171.)

14 On January 12, 2016, the Court denied Presidio's motions for: (1) summary
15 judgment of definiteness; (2) summary judgment of infringement; (3) summary judgment
16 of ATC's equitable affirmative defenses; and (4) summary judgment of no acceptable non-
17 infringing alternatives. (Doc. No. 210.) In the order, the Court also denied ATC's motions
18 for: (1) partial summary judgment of non-infringement; (2) summary judgment of
19 indefiniteness; and (3) summary judgment of no willful infringement. (Id.) On February
20 10, 2016, the Court granted ATC's motion for summary judgment of its affirmative defense
21 of absolute intervening rights and held that Presidio is entitled to infringement damages
22 only for the time period following the issuance of the reexamination certificate on
23 December 8, 2015. (Doc. No. 234 at 28.) In that order, the Court also dismissed with
24 prejudice ATC's affirmative defense and counterclaim that the '356 patent is unenforceable
25 due to inequitable conduct. (Id. at 33.)

26 The Court held a jury trial beginning on April 5, 2016. (Doc. No. 297.) During the
27 trial, on April 8, 2016, ATC filed a motion for judgment as a matter of law pursuant to
28 Federal Rule of Civil Procedure 50(a). (Doc. No. 307.) On April 18, 2016, the jury

1 returned a verdict finding direct infringement and induced infringement of claims 1, 3, 5,
2 16, 18, and 19 of the '356 patent by ATC as to all of the accused products in the action: the
3 550L, the 550S, the 550U, and the 550Z capacitors. (Doc. No. 328 at 2-3.) In addition,
4 the jury found that Presidio had proven by clear and convincing evidence that ATC's
5 infringement of the asserted claims was willful. (Id. at 4.) The jury awarded Presidio
6 \$2,166,654 in lost profit damages. (Id.) The jury also issued an advisory verdict as to
7 indefiniteness and found that ATC had failed to prove by clear and convincing evidence
8 that claim 1 of the '356 patent is indefinite.² (Id. at 5.)

9 On June 17, 2016, the Court issued a memorandum decision finding in favor of
10 Presidio and against ATC on all issues submitted to the Court, including indefiniteness,
11 equitable intervening rights, equitable estoppel, and laches. (Doc. No. 368.) On June 17,
12 2016, the Court entered judgment in favor of Presidio on all causes of action and awarded
13 Plaintiff \$2,166,654 in damages. (Doc. No. 369.)

14 By the present motions, ATC moves for judgment as a matter of law pursuant to
15 Federal Rule of Civil Procedure 50(b) or, in the alternative, for a new trial pursuant to Rule
16 59 on the following issues: (1) infringement; (2) induced infringement; (3) willful
17 infringement; and (4) lost profits. (Doc. Nos. 399, 400, 402.) Presidio moves for: (1) a
18 permanent injunction; (2) enhanced damages; (3) attorney's fees; (4) supplemental
19 damages; and (5) prejudgment and postjudgment interest. (Doc. Nos. 372, 373, 377.)

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26 ² The verdict form initially had the "Yes" box marked in response to question No. 6 "Has ATC
27 proved by clear and convincing evidence that claim 1 of the '356 patent is indefinite?" (Doc. No. 328 at
28 5.) During the reading of the verdict in open court, the jurors agreed that checking the "Yes" box in
response to question No. 6 was a clerical error and then amended the verdict form to reflect that the
"No" box should be checked. (See id.; Doc. No. 333 at 8-11.)

Discussion

I. ATC’s Motions for Judgment as a Matter of Law and for a New Trial

A. Legal Standard for a Rule 50 Motion for Judgment as a Matter of Law

In a patent case, a motion for judgment as a matter of law is governed by the regional circuit, here the Ninth Circuit. InTouch Techs., Inc. v. VGO Commc’ns, Inc., 751 F.3d 1327, 1338 (Fed. Cir. 2014). Under Federal Rule of Civil Procedure 50, a court should render judgment as a matter of law (“JMOL”) only when “a party has been fully heard on an issue during a jury trial and the court finds that a reasonable jury would not have a legally sufficient evidentiary basis to find for the party on that issue” Fed. R. Civ. P. 50(a)(1); see Reeves v. Sanderson Plumbing Prods., 530 U.S. 133, 149 (2000). In other words, judgment as a matter of law is proper when “the evidence, construed in the light most favorable to the nonmoving party, permits only one reasonable conclusion, and that conclusion is contrary to the jury’s verdict.” Pavao v. Pagay, 307 F.3d 915, 918 (9th Cir. 2002); accord InTouch Techs., 751 F.3d at 1338; see also Hangarter v. Provident Life & Accident Ins. Co., 373 F.3d 998, 1005 (9th Cir. 2004) (“JMOL should be granted only if the verdict is ‘against the great weight of the evidence, or it is quite clear that the jury has reached a seriously erroneous result.’”). In contrast, “[a] jury’s verdict must be upheld if it is supported by substantial evidence, which is evidence adequate to support the jury’s conclusion, even if it is also possible to draw a contrary conclusion.” Pavao, 307 F.3d at 918.

In deciding a motion for judgment as a matter of law, a court “must view all evidence in the light most favorable to the nonmoving party, draw all reasonable inferences in the favor of the non-mover, and disregard all evidence favorable to the moving party that the jury is not required to believe.” Harper v. City of Los Angeles, 533 F.3d 1010, 1021 (9th Cir. 2008); see Reeves, 530 U.S. at 150-51. A district court “may not make credibility determinations or weigh the evidence.” Reeves, 530 U.S. at 150. “[T]he court must accept the jury’s credibility findings consistent with the verdict’ . . . [and] ‘may not substitute its view of the evidence for that of the jury.’” Winarto v. Toshiba Am. Elecs. Components,

1 Inc., 274 F.3d 1276, 1283 (9th Cir. 2001).

2 B. Legal Standard for a Rule 59 Motion for New Trial

3 In a patent case, a motion for a new trial is also governed by the law of the regional
4 circuit. InTouch Techs., 751 F.3d at 1338. Under Federal Rule of Civil Procedure 59(a),
5 a district court “may, on motion, grant a new trial on all or some of the issues—and to any
6 party— . . . after a jury trial, for any reason for which a new trial has heretofore been granted
7 in an action at law in federal court.” “Rule 59 does not specify the grounds on which a
8 motion for a new trial may be granted. Rather, the court is bound by those grounds that
9 have been historically recognized.” Molski v. M.J. Cable, Inc., 481 F.3d 724, 729 (9th Cir.
10 2007) (internal citations and quotation marks omitted). In the Ninth Circuit, “[t]he trial
11 court may grant a new trial only if the verdict is contrary to the clear weight of the evidence,
12 is based upon false or perjurious evidence, or to prevent a miscarriage of justice.” Id.; see
13 also Lucent Techs., Inc. v. Gateway, Inc., 580 F.3d 1301, 1309 (Fed. Cir. 2009) (“[A]
14 district court in the Ninth Circuit ‘may grant a new trial only if the verdict is against the
15 clear weight of the evidence.’”). “Unlike with a Rule 50 determination, [a] district court,
16 in considering a Rule 59 motion for new trial, is not required to view the trial evidence in
17 the light most favorable to the verdict. Instead, the district court can weigh the evidence
18 and assess the credibility of the witnesses.” Experience Hendrix L.L.C. v.
19 Hendrixlicensing.com Ltd, 762 F.3d 829, 842 (9th Cir. 2014). “[A] district court may not
20 grant a new trial simply because it would have arrived at a different verdict.” Wallace v.
21 City of San Diego, 479 F.3d 616, 630 (9th Cir. 2007).

22 “The grant of a new trial is ‘confided almost entirely to the exercise of discretion on
23 the part of the trial court.’” Murphy v. City of Long Beach, 914 F.2d 183, 186 (9th Cir.
24 1990) (quoting Allied Chem. Corp. v. Daiflon, Inc., 449 U.S. 33, 36 (1980)). On appeal,
25 the Ninth Circuit “afford[s] considerable deference to the district court’s new trial decision
26 and will not overturn the district court’s decision to grant a new trial absent an abuse of
27 discretion.” Experience Hendrix, 762 F.3d at 842. A district court’s “denial of a motion
28 for a new trial is reversible ‘only if the record contains no evidence in support of the

1 verdict’ or if the district court ‘made a mistake of law.’” E.E.O.C. v. Go Daddy Software,
2 Inc., 581 F.3d 951, 962 (9th Cir. 2009).

3 C. Infringement

4 ATC moves for judgment as a matter of law that its 550 capacitors do not infringe
5 claims 1, 3, 5, 16, 18, and 19 of the ’356 patent, or in the alternative, for a new trial on the
6 issue of infringement. (Doc. No. 399-1 at 25.) Under 35 U.S.C. § 271(a), “whoever
7 without authority makes, uses, offers to sell, or sells any patented invention, within the
8 United States . . . infringes the patent.” A patent infringement analysis proceeds in two
9 steps. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995), aff’d
10 517 U.S. 370. In the first step, the court construes the asserted claims as a matter of law.
11 See id. In the second step, the factfinder compares the claimed invention to the accused
12 device. Id.; see also Verizon Servs. Corp. v. Cox Fibernet Va., Inc., 602 F.3d 1325, 1340
13 (Fed. Cir. 2010) (“A determination of infringement is a question of fact . . .”).

14 “[A] patentee who files a complaint or counterclaim alleging patent infringement
15 bears the burden of proving that infringement.” Medtronic Inc. v. Boston Sci. Corp., 695
16 F.3d 1266, 1272 (Fed. Cir. 2012). “To prove literal infringement, the patentee must show
17 that the accused device contains every limitation in the asserted claims. If even one
18 limitation is missing or not met as claimed, there is no literal infringement.” Riles v. Shell
19 Exploration & Prod. Co., 298 F.3d 1302, 1308 (Fed. Cir. 2002); accord Uniloc USA, Inc.
20 v. Microsoft Corp., 632 F.3d 1292, 1301 (Fed. Cir. 2011).

21 ATC argues that it is entitled to judgment as a matter of law of no infringement
22 because Presidio, through its infringement expert, failed to prove that the high frequency
23 performance of the accused products is derived from the fringe-effect capacitance between
24 the capacitors’ external contacts rather than from the capacitors’ internal electrodes. (Doc.
25 No. 399-1 at 1-21.) In response, Presidio argues ATC’s contention is based on an improper
26 attempt to redefine the scope of the asserted claims of the ’356 patent. (Doc. No. 424 at 5-
27 9.) The Court agrees with Presidio.

28 In its motion, ATC argues that the asserted claims of the ’356 patent, as amended by

1 the December 8, 2015 reexamination certificate, require that the capacitor's high frequency
2 performance derive solely from the fringe-effect capacitance between the capacitor's
3 external contacts; "[h]igh frequency capacitors that derive their high-frequency
4 performance from internal structures of the capacitor do not infringe Presidio's '356
5 patent." (Doc. No. 399-1 at 1.) But the asserted claims have never been construed to
6 contain a limitation requiring that the fringe-effect capacitance between the external
7 contacts of the capacitor, and not the internal structures of the capacitor, affect the
8 capacitor's high frequency performance. Such a limitation is not contained in the plain
9 language of the asserted claims of the '356 patent as amended by the December 8, 2015
10 reexamination certificate. See '356 Patent at 13:26-28, 14:1-2, 14:9-16; '356 Patent Dec.
11 8, 2015 Reexamination Certificate at 1:23-2:9 ("the second contact being located
12 sufficiently close to the first contact in an edge to edge relationship in such proximity as to
13 form a first fringe-effect capacitance with the first contact that is capable of being
14 determined by measurement in terms of a standard unit"). Such a limitation is also not
15 contained in the Court's claim construction order. (See Doc. No. 103.) Such a limitation
16 was also not contained in ATC's proposed jury instruction regarding the Court's claim
17 constructions, (Doc. No. 296 at 19), or in the actual instructions that were provided to the
18 jury regarding the Court's claim constructions. (See Doc. No. 327 (Court's Instruction No.
19 17).)

20 Further, in determining the scope of the amended claims when ruling on the parties'
21 cross-motions for summary judgment of ATC's absolute intervening rights defense, the
22 Court never found that such a limitation was present in the amended claims. (See Doc. No.
23 234.) Cf. R+L Carriers, Inc. v. Qualcomm, Inc., 801 F.3d 1346, 1350 (Fed. Cir. 2015)
24 (explaining that the determination of claim scope for an intervening rights analysis is "a
25 matter of claim construction"). In determining that the amendments in the December
26 8, 2015 reexamination certificate narrowed the scope of the asserted claims, the Court
27 determined "that the scope of the asserted claims as amended by the December 8, 2015
28 reexamination certificate requires a fringe-effect capacitance that is actually measurable

1 such as in the manner shown in Figs. 21A and 21B of the '356 patent.” (Id. at 20.) A
2 fringe-effect capacitance that is negligible or merely theoretically present, i.e., a
3 capacitance that is merely derivable by using theoretical calculations or simulations, is
4 outside the scope of the amended claims. (Id.) Figures 21A and 21B of the '356 patent
5 are graphs representing the insertion loss of a capacitor. '356 Patent at 6:10-16.
6 Accordingly, the Court’s absolute intervening rights summary judgment order only holds
7 that the amended claims contain the limitation that the fringe-effect capacitance between
8 the external contacts be capable of being determined by measurement such as through
9 insertion loss measurements, and not merely by using theoretical calculations. The order
10 does not hold that the amended claims contain a limitation specifically requiring that the
11 fringe-effect capacitance between the external contacts of the capacitors, and not its
12 internal structures, affect the capacitor’s high frequency performance.³

13 ATC cannot seek a new claim construction post-trial. ATC did not request a
14 construction of the asserted claims containing the limitation that the fringe-effect
15 capacitance between the external contacts, not internal structures, affect the capacitor’s
16 high frequency performance in its claim construction briefing; at the claim construction
17 hearing; following the issuance of the December 8, 2015 reexamination certification; in its
18 motion for summary judgment on its defense of absolute intervening rights; through a
19

20 ³ ATC notes that the prior court held that Presidio admitted that “‘insertion loss’ is ‘a property
21 critical to and very specific to high frequency performance.’” (Doc. No. 399-1 at 9 (citing Doc. No. 234
22 at 5 n.3); see also Doc. No. 432 at 8-9 (citing Doc. No. 235 at 26).) But ATC fails to further explain
23 how this admission necessitates its proposed construction. It does not follow that because insertion loss
24 is critical to high frequency performance and the claims require that the fringe-effect capacitance be
25 actually measurable such as through insertion loss testing, that the claims then must require that the
26 fringe-effect capacitance between the capacitor’s external contacts, and not internal structures, affect the
27 capacitor’s high frequency performance. At best, this means that if the fringe-effect capacitance is to be
28 measured through insertion loss testing, then it must have some effect on the capacitor’s high frequency
performance; not that the capacitor’s high frequency performance must only be derived from the fringe-
effect capacitance between the external contacts and not from any internal structures. Further, Presidio’s
infringement expert, Dr. Huebner, testified that although the accused products contain some internal
capacitances that help with high frequency performance, the highest frequency performance of the
capacitors is achieved by the fringe-effect capacitance. (Doc. No. 306, Trial Tr. Vol. III at 162-63; see
also id. at 27-29, 38-53, 57-63; Doc. No. 331, Trial Tr. Vol. V at 222.)

1 motion for clarification; in its proposed jury instructions; or its Rule 50(a) motion for
2 judgment as a matter of law. (See Doc. No. 93, 98, 104, 189, 212-1, 227, 296, 307.)
3 Therefore, ATC waived its argument that the claims should be construed to contain this
4 limitation, and ATC cannot raise this argument through post-trial motions. See Cordis
5 Corp. v. Boston Sci. Corp., 561 F.3d 1319, 1331 (Fed. Cir. 2009) (“[L]itigants waive their
6 right to present new claim construction disputes if they are raised for the first time after
7 trial.”); GPNE Corp. v. Apple Inc., 108 F. Supp. 3d 839, 850 (N.D. Cal. 2015)
8 (“[Plaintiff’s] two claim construction arguments were not raised at the Markman stage or
9 in briefing regarding the jury instructions. [Plaintiff] provides no citation to prior efforts
10 to raise the latter two arguments, and does not otherwise argue that it properly preserved
11 those arguments for post-trial consideration. The Court therefore concludes [plaintiff]’s
12 arguments with respect to the purpose of the invention and claim differentiation are waived.
13 A party may not raise new claim construction arguments for the first time in post-trial
14 briefing.” (citations omitted)). In sum, because the Court did not construe the asserted
15 claims to contain the specific limitation requiring that the fringe-effect capacitance between
16 the external contacts of the capacitor, not its internal structures, affect the capacitor’s high
17 frequency performance, the Court rejects ATC’s argument that it is entitled to judgment as
18 a matter of law on this issue.

19 ATC also argues that it is entitled to a new trial on the issue of infringement because
20 the Court admitted Dr. Huebner’s computer simulation evidence at trial over its objection.
21 (Doc. No. 399-1 at 21-25.) The Court rejects ATC’s request for a new trial on this issue.
22 The simulation testing evidence Dr. Huebner presented at trial was relevant to provide
23 background and context for his opinions and measurements. The evidence was admitted
24 to demonstrate that fringe-effect capacitance exists between the external contacts of the
25 550 capacitors. That the evidence was used for this purpose could not have confused the
26 jury because both Presidio’s and ATC’s experts agreed that fringe-effect capacitance is
27 well known and always exists between the external contacts of a capacitor. (Doc. No. 305,
28 Trial Tr. Vol. II at 261; Doc. No. 306, Trial Tr. Vol. III at 151; Doc. No. 331, Trial Tr. Vol.

1 V at 78.)

2 ATC also erroneously argues that it sought to introduce into evidence its own
3 computer simulations. (Doc. No. 399-1 at 24.) ATC was permitted to present its
4 simulation evidence to the jury at trial. At trial, ATC initially only sought to have the
5 exhibits at issue admitted as demonstratives, and the Court received them as demonstratives
6 over Presidio's objections. (Doc. No. 331, Trial Tr. Vol. V at 50-52.) ATC later sought to
7 have the exhibits admitted as evidence, and Presidio objected to the exhibits pursuant to
8 Federal Rule of Evidence 403 on the grounds that they also contained inadmissible editorial
9 comments. (*Id.* at 69-70.) The Court sustained the objection. (*Id.*) Presidio stated that it
10 would be fine to admit the exhibits if the editorial comments were removed, but ATC never
11 sought to introduce the exhibits into evidence without the editorial comments. (*Id.* at 70.)
12 Further, ATC has failed to show that it was prejudiced by the Court's refusal to admit the
13 exhibits into evidence. ATC states that the purpose of these exhibits was to show that non-
14 infringing capacitors have fringing field lines between their external contacts. (Doc. No.
15 399-1 at 24.) But this evidence then was cumulative of other evidence in the record because
16 both sides' experts agreed that fringe-effect capacitance is well known and always exists
17 between the external contacts of a capacitor. (Doc. No. 305, Trial Tr. Vol. II at 261; Doc.
18 No. 306, Trial Tr. Vol. III at 151; Doc. No. 331, Trial Tr. Vol. V at 78.) Accordingly, the
19 Court rejects ATC's argument that it is entitled to a new trial based on the computer
20 simulation evidence that was admitted at trial.⁴

21 The jury's infringement verdict was supported by substantial evidence and not
22 against the clear weight of evidence. Presidio's infringement expert provided testimony,
23

24
25 ⁴ ATC also argues that it is entitled to a new trial because the Court allowed Presidio's witnesses
26 to testify that the December 8, 2015 reexamination certificate did not change the scope of the asserted
27 claims. (Doc. No. 399-1 at 25 n.12; Doc. No. 432 at 14.) ATC has failed to explain how it was
28 prejudiced by this testimony. The Court instructed the jury as to the proper scope of the asserted claims
under the Court's claim construction orders. (Doc. No. 327 (Court's Instruction No. 17).) "A jury is
presumed to follow its instructions." *Weeks v. Angelone*, 528 U.S. 225, 234 (2000).

1 supported by analysis and testing, explaining how the accused products satisfied all the
 2 limitations in the asserted claims. (See Doc. No. 305, Trial Tr. Vol. II at 243-44, 249-65;
 3 Doc. No. 306, Trial Tr. Vol. III at 1-80.) This testimony was more than adequate to allow
 4 the jury to reach its finding of infringement. See, e.g., Martek Biosciences Corp. v.
 5 Nutrinova, Inc., 579 F.3d 1363, 1373-74 (Fed. Cir. 2009). Because the jury's infringement
 6 verdict was supported by substantial evidence, it must be upheld. See Pavao, 307 F.3d at
 7 918. Accordingly, the Court denies ATC's motion for judgment as a matter of law of no
 8 infringement, or in the alternative, for a new trial on the issue of infringement.

9 D. Induced Infringement

10 ATC moves for judgment as a matter of law of no induced infringement, or in the
 11 alternative, for a new trial on the issue of induced infringement. (Doc. No. 400-1 at 22-
 12 24.) ATC argues that the jury's finding of active inducement was not supported by
 13 substantial evidence. (Id.)

14 35 U.S.C. § 271(b) provides: "Whoever actively induces infringement of a patent
 15 shall be liable as an infringer." To prove inducement, the patentee must establish that "the
 16 defendant knew of the patent and that 'the induced acts constitute patent infringement.'"⁵
 17 Commil USA, LLC v. Cisco Sys., Inc., 135 S. Ct. 1920, 1926 (2015). Intent can be shown
 18 through circumstantial evidence. Vita-Mix Corp. v. Basic Holding, Inc., 581 F.3d 1317,
 19 1328 (Fed. Cir. 2009). For example, evidence of active steps taken to encourage direct
 20 infringement can be found in "'advertising an infringing use or instructing how to engage
 21 in an infringing use.'" Takeda Pharm. U.S.A., Inc. v. W.-Ward Pharm. Corp., 785 F.3d
 22 625, 630-31 (Fed. Cir. 2015) (quoting Metro-Goldwyn-Mayer Studios Inc. v. Grokster,

23
 24
 25 ⁵ To prove inducement, the patentee must also establish direct infringement. See Lucent Techs.,
 26 Inc. v. Gateway, Inc., 580 F.3d 1301, 1322 (Fed. Cir. 2009) ("[A] finding of inducement requires a
 27 threshold finding of direct infringement—either a finding of specific instances of direct infringement or
 28 a finding that the accused products necessarily infringe."'). As explained in the prior section, substantial
 evidence supports the jury's finding that the accused products directly infringe the asserted claims of the
 '356 patent. See supra.

1 Ltd., 545 U.S. 913, 936 (2005)).

2 At trial, Presidio presented sufficient evidence to allow the jury to find that ATC
3 knew about of the '356 patent. One of ATC's engineers, who was involved in the design
4 of the accused products, testified that he was aware of the application that later issued as
5 the '356 patent and the '356 patent itself. (Doc. No. 305, Trial Tr. Vol. II at 48-49, 56-57,
6 81-83.)

7 Presidio also presented sufficient evidence to allow the jury to find that ATC knew
8 that the induced acts constituted patent infringement. ATC's design engineer testified that
9 he not only knew about the '356 patent, but also the results of the prior litigation. (Id. at
10 57.) Further, Presidio presented evidence showing that ATC actively promoted and sold
11 the 550 capacitors to its customers for use, and provided information related to the accused
12 products to its customers, such as data sheets. (Id. at 3, 112-13.) Presidio also presented
13 evidence showing that ATC promoted the 550 capacitors to its customers as a replacement
14 for the 545L capacitor – the capacitor that was found to infringe the '356 patent in the prior
15 action. (Id. at 56-57, 137-38, 153-54, 167-68.) This evidence was sufficient to support the
16 jury's finding of inducement.⁶ See Takeda, 785 F.3d at 630-31; see, e.g., i4i Ltd. P'ship v.
17 Microsoft Corp., 598 F.3d 831, 851-52 (Fed. Cir. 2010) (affirming the jury's finding of
18 inducement as supported by substantial evidence where the evidence in the record showed
19 that the defendant provided instructions that taught users to practice the accused product in
20 a manner the defendant knew would result in an infringing use).

21 ATC argues that there was insufficient evidence to establish its intent to induce
22 infringement of the '356 patent because by December 8, 2015 – the time when the relevant
23

24 ⁶ ATC argues that this evidence is insufficient to establish inducement because these actions
25 occurred prior to the claims being amended through the December 8, 2015 reexamination certificate and
26 during the period when ATC's sales were determined to be lawful under the Court's intervening rights
27 ruling. (Doc. No. 434 at 16.) ATC argues that until December 8, 2015, it knew that the '356 patent was
28 invalid and, thus, knew there could be no infringement and there was no corresponding intent to induce.
(Id.) This argument is foreclosed by the Supreme Court's recent decision in Commil. In Commil, the
Supreme Court held that "a belief as to invalidity cannot negate the scienter required for induced
infringement." 135 S. Ct. at 1929.

1 period of infringement began – ATC had an objectively reasonable non-infringement
2 defense. (Doc. No. 400-1 at 23-24.) To the extent ATC is arguing that an objectively
3 reasonable non-infringement defense negates a finding of inducement, the Federal Circuit
4 has recently rejected this contention. See Unwired Planet, LLC v. Apple Inc., No. 2015-
5 1725, 2016 WL 3947839, at *8 (Fed. Cir. July 22, 2016) (The Supreme Court’s cases on
6 inducement “require a showing of the accused infringer’s subjective knowledge as to the
7 underlying direct infringement. The district court’s reliance on the objective strength of
8 Apple’s non-infringement arguments as precluding a finding of induced or contributory
9 infringement was erroneous.”). Further, to the extent ATC is arguing that the non-
10 infringement defense it presented at trial was sufficient to allow the jury to find that it
11 lacked the requisite intent to induce infringement, this argument also fails as the jury was
12 not required to accept ATC’s evidence on this issue and was free to reject it. Cf. Harper,
13 533 F.3d at 1021 (explaining that in reviewing a motion for judgment as a matter of law,
14 the court must “disregard all evidence favorable to the moving party that the jury is not
15 required to believe”). Accordingly, the Court denies ATC’s motion for judgment as a
16 matter of law of no induced infringement, or in the alternative, for a new trial on the issue
17 of induced infringement.

18 E. Willful Infringement

19 ATC moves for judgment as a matter of law of no willful infringement, or in the
20 alternative, for a new trial on the issue of willful infringement. (Doc. No. 400-1 at 3-22.)
21 At the time the jury rendered its verdict, the Federal Circuit had held “that an award of
22 enhanced damages [under section 284] requires a showing of willful infringement.” In re
23 Seagate Tech., LLC, 497 F.3d 1360, 1368 (Fed. Cir. 2007) (en banc).

24 To establish willful infringement, the patentee has the burden of showing “by
25 clear and convincing evidence that the infringer acted despite an objectively
26 high likelihood that its actions constituted infringement of a valid patent.”
27 “The state of mind of the accused infringer is not relevant to this objective
28 inquiry.” Only if the patentee establishes this “threshold objective standard”
does the inquiry then move on to whether “this objectively-defined risk
(determined by the record developed in the infringement proceeding) was

1 either known or so obvious that it should have been known to the accused
2 infringer.”

3 Bard Peripheral Vascular, Inc. v. W.L. Gore & Associates, Inc., 776 F.3d 837, 844 (Fed.
4 Cir. 2015) (quoting Seagate, 497 F.3d at 1371). The Federal Circuit further held that the
5 objective prong of the willfulness test is to be decided by the Court as a matter of law;
6 while the subjective prong of the test is a question of fact. See Bard Peripheral Vascular,
7 Inc. v. W.L. Gore & Associates, Inc., 682 F.3d 1003, 1006-08 (Fed. Cir. 2012).

8 On June 13, 2016, the Supreme Court issued its decision in Halo Elecs., Inc. v. Pulse
9 Elecs., Inc., No. 14-1513, 579 U.S. __ (June 13, 2016). In Halo, the Supreme Court
10 rejected the Federal Circuit’s two-part test from Seagate for determining when a district
11 court may award enhanced damages as inconsistent with § 284. Id., slip op. at 1-2. The
12 Supreme Court explained that § 284 commits the award of enhanced damages to the
13 discretion of the district court. See id. at 8, 12-13, 15. The Supreme Court further
14 explained that the Seagate test is “unduly rigid” and “impermissibly encumbers” a
15 district court’s discretion, particularly its requirement that there must be a finding of
16 objective recklessness in every case before a district court may award enhanced damages.
17 Id. at 9. “The subjective willfulness of a patent infringer, intentional or knowing, may
18 warrant enhanced damages, without regard to whether his infringement was objectively
19 reckless.” Id. at 10. “Section 284 permits district courts to exercise their discretion in a
20 manner free from the inelastic constraints of the Seagate test.” Id. at 11.

21 ATC first argues that it is entitled to judgment as a matter of law on the issue of
22 willfulness because Halo commits the entire issue of enhanced damages to the district
23 court’s discretion and a separate factual finding of willfulness by a jury no longer exists
24 under the standard. (Doc. No. 400-1 at 3-8.) The Court has previously rejected this
25 argument, (Doc. No. 368 at 27), and this argument has also recently been rejected by the
26 Federal Circuit. In WBIP, LLC v. Kohler Co., the Federal Circuit held that Halo does not
27 change “the established law that the factual components of the willfulness question should
28 be resolved by the jury.” No. 2015-1038, 2016 WL 3902668, at *15 (Fed. Cir. July 19,

2016); see also id. at *15 n.13 (Halo “leaves in place our prior precedent that there is a right to a jury trial on the willfulness question.”). ATC may disagree with the Federal Circuit’s decision in WBIP. (Doc. No. 421 at 2; Doc. No. 434 at 4-5.) Nevertheless, WBIP represents binding circuit law, and this Court must follow it.⁷ See Yong v. I.N.S., 208 F.3d 1116, 1119 n.2 (9th Cir. 2000) (“[O]nce a federal circuit court issues a decision, the district courts within that circuit are bound to follow it.”). Accordingly, the Court rejects ATC’s contention that it was an error for the Court to submit the issue of subjective willfulness to the jury.

ATC also argues that the jury’s willfulness finding is invalid because there has been no finding as to the objective reasonableness of ATC’s defenses. (Doc. No. 400-1 at 8-9; Doc. No. 434 at 8-10.) ATC argues that objective reasonableness remains a factor in any willfulness determination post-Halo. (Doc. No. 400-1 at 8.) This argument is also foreclosed by the Federal Circuit’s recent decision in WBIP. In WBIP, the Federal Circuit held that “[p]roof of an objectively reasonable litigation-inspired defense to infringement is no longer a defense to willful infringement.” 2016 WL 3902668, at *15 (Fed. Cir. July 19, 2016); see also Halo, 136 S. Ct. at 1933 (“The subjective willfulness of a patent infringer, intentional or knowing, may warrant enhanced damages, without regard to whether his infringement was objectively reckless.”). Accordingly, the Court rejects ATC’s contention that a jury must consider objective reasonableness when making a willfulness determination.

ATC next argues that the jury’s willfulness finding should be vacated because the court’s instructions on willfulness failed to properly reflect the standard set forth in Halo.

⁷ ATC characterizes the above statement from WBIP as dicta. (Doc. No. 421 at 2; Doc. No. 434 at 4.) The Court disagrees. The statement is not dicta because the panel’s determination that the factual components of the willfulness question should still be decided by a jury was necessary to the panel’s ultimate decision to affirm the district court’s enhanced damages award. See N.L.R.B. v. Int’l Bhd. of Elec. Workers, Local 340, 481 U.S. 573, 592 n.15 (1987) (describing a statement in a prior case as dicta because it “was unnecessary to the disposition” of the case); Exp. Grp. v. Reef Indus., Inc., 54 F.3d 1466, 1472 (9th Cir. 1995) (describing dicta as statements that are not “necessary to the decision”).

(Doc. No. 400-1 at 9-10; Doc. No. 434 at 5-7.) In support of this argument, ATC relies on the following language from Halo: “Awards of enhanced damages . . . are not to be meted out in a typical infringement case, but are instead designed as a ‘punitive’ or ‘vindictive’ sanction for egregious infringement behavior. The sort of conduct warranting enhanced damages has been variously described in our cases as willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or—indeed—characteristic of a pirate.” Halo, 136 S. Ct. at 1932. But here, the Supreme Court is discussing the standard that a district court should use when ultimately determining whether to exercise its discretion and award enhanced damages, not the standard that should be used by the factfinder when making a finding as to subjective willfulness. Accordingly, the Court rejects this argument.⁸

Finally, ATC argues that it is entitled to judgment as a matter of law as to willfulness because there was insufficient evidence to support a finding of willfulness even under the standard applied by the jury.⁹ (Doc. No. 400-1 at 10-22.) The Court disagrees. The jury’s

⁸ In its reply brief, ATC argues for the first time that jury’s willfulness finding was insufficient because the jury was not asked to make specific factual findings by answering special interrogatories in the verdict. (Doc. No. 434 at 7-8.) This argument is waived because ATC did not object to the verdict form on this ground at trial. (See Doc. No. 331, Trial Tr. Vol. V at 245-57; Doc. No. 332, Trial Tr. Vol. VI at 3-4.) This argument is also waived because ATC raised this argument for the first time in a reply brief. See Bazuaye v. I.N.S., 79 F.3d 118, 120 (9th Cir. 1996) (“Issues raised for the first time in the reply brief are waived.”); accord Novosteel SA v. U.S., Bethlehem Steel Corp., 284 F.3d 1261, 1274 (Fed. Cir. 2002).

⁹ The Court provided the following jury instruction as to willful infringement:

In this case, Presidio also argues that ATC willfully infringed Presidio the ’356 patent.

To prove willful infringement against ATC, Presidio must first persuade you that ATC infringed a valid and enforceable claim of Presidio’s asserted patent. The requirements for proving such infringement were discussed in my prior instructions. In addition, to prove willful infringement, Presidio must persuade you by clear and convincing evidence that on or after December 8, 2015, ATC acted with reckless disregard of the claims of the patent holder’s patent. When a party has the burden of proving something by clear and convincing evidence, it means you must be persuaded by the evidence that the claim or defense is highly probable. This is a higher standard of proof than proof by a preponderance of the evidence.

willfulness finding was supported by substantial evidence. One of ATC's engineers who was involved in the design of the accused products, testified that he was aware of the application that later issued as the '356 patent and the '356 patent itself. (Doc. No. 305, Trial Tr. Vol. II at 48-49, 56-57, 81-83; see also Doc. No. 426-6, Ex. F (Trial Ex. 44); Doc. No. 426-7, Ex. G (Trial Ex. 46); Doc. No. 426-9, Ex. I (Trial Ex. 189).) The engineer testified that he not only knew about the '356 patent, but also the results of the prior litigation. (Doc. No. 305, Trial Tr. Vol. II at 57.) Further, Presidio presented evidence showing that ATC promoted the 550 capacitors to its customers as a replacement for the 545L capacitor – the capacitor that was found to infringe the '356 patent in the prior lawsuit. (Id. at 56-57, 137-38, 153-54, 167-68.)¹⁰ Presidio also presented evidence

To demonstrate such “reckless disregard,” Presidio must persuade you that ATC actually knew, or it was so obvious that ATC should have known, that its actions constituted infringement of a valid patent. In deciding whether ATC acted with reckless disregard for Presidio's asserted patents, you should consider all of the facts surrounding the alleged infringement including, but not limited to, the following factors:

1. Whether ATC acted in a manner consistent with the standards of commerce for its industry;
2. Whether ATC intentionally copied a product of Presidio covered by the patents;
3. Whether there is a reasonable basis to believe that ATC did not infringe or had a reasonable defense to infringement, including a belief that the patent-in-suit is invalid;
4. Whether ATC made a good-faith effort to avoid infringing the patent, for example, whether ATC attempted to design around the patent;
5. Whether ATC tried to cover up its alleged infringement.

(Doc. No. 327 at 35-36.)

¹⁰ ATC argues that this evidence is irrelevant because it predates December 8, 2015 – the date on which the relevant period of infringement began under the Court's intervening rights ruling. (Doc. No. 400-1 at 10-11.) ATC argues that this evidence can only establish ATC's knowledge during the non-infringement period. (Id.) The Court disagrees. Evidence of what ATC knew prior to December 8, 2015 is relevant to what ATC knew after December 8, 2015. (Doc. No. 275 at 12-13.) Indeed, it is generally reasonable to infer that if a person knows about something prior to a certain date, that person retains that knowledge after that certain date.

1 showing that ATC was aware that the claims as amended had survived three PTO
2 reexamination proceedings that ATC itself had instituted. (Doc. No. 304, Trial Tr. Vol. I
3 at 143; Doc. No. 305, Trial Tr. Vol. II at 192.) This evidence was sufficient for the jury to
4 find that ATC acted with reckless disregard of the claims of the '356 patent.

5 ATC notes that its corporate secretary, Mr. Evan Slavitt, testified that as of
6 December 8, 2015 – the date infringement began – he had reason to believe, based on the
7 expert reports and pleadings in the case, that ATC was not infringing the '356 patent. (Doc.
8 No. 400-1 (citing Doc. No. 330, Trial Tr. Vol. IV at 216-17; Doc. No. 331, Trial Tr. Vol.
9 V at 1-2).) But the jury was not required to credit this testimony. Cf. Harper, 533 F.3d at
10 1021 (explaining that in reviewing a motion for judgment as a matter of law, the court must
11 “disregard all evidence favorable to the moving party that the jury is not required to
12 believe”). In addition, the Court notes that the jury found willful infringement by clear and
13 convincing evidence – a higher burden of proof than is required after Halo. See 136 S. Ct.
14 at 1934. Accordingly, the jury’s willfulness finding was supported by substantial evidence
15 and was also not against the clear weight of evidence.

16 Moreover, the Court notes that ATC’s motion on this issue is essentially moot
17 because the Court, exercising its sound discretion, ultimately declines to award Presidio
18 enhanced damages despite the jury’s finding of willful infringement. See infra.
19 Accordingly, the Court denies ATC’s motion for judgment as a matter of law of no willful
20 infringement, or in the alternative, for a new trial on the issue of willful infringement.

21 F. Lost Profits

22 Presidio moves for judgment as a matter of law of no lost profits, or in the alternative,
23 for a new trial on lost profit damages on two grounds. First, ATC argues that Presidio
24 failed to establish that it was entitled to lost profit damages because it failed to prove the
25 absence of non-infringing alternatives. (Doc. No. 402-1 at 4-13.) Second, ATC argues
26 that Presidio failed to establish that it was entitled to lost profit damages because it failed
27 to properly apportion between the patented and unpatented features of the accused
28 products. (Id. at 13-19.) ATC further argues that because Presidio failed to prove that it

1 is entitled to lost profit damages, Presidio is only entitled to damages in the form of a
2 reasonable royalty of \$0.25 per capacitor. (Id. at 1, 4.)

3 35 U.S.C. § 284 provides: “Upon finding for the claimant the court shall award the
4 claimant damages adequate to compensate for the infringement, but in no event less than a
5 reasonable royalty for the use made of the invention by the infringer.” 35 U.S.C. § 284.
6 “The phrase ‘damages adequate to compensate’ means full compensation for any damages
7 the patent owner suffered as a result of the infringement. Full compensation includes any
8 foreseeable lost profits the patent owner can prove.” Grain Processing Corp. v. Am. Maize-
9 Products Co., 185 F.3d 1341, 1349 (Fed. Cir. 1999) (internal citations and quotation marks
10 omitted).

11 “To recover lost profits damages, the patentee must show a reasonable probability
12 that, ‘but for’ the infringement, it would have made the sales that were made by the
13 infringer.” Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1545 (Fed. Cir. 1995) (en banc);
14 accord Grain Processing, 185 F.3d at 1349 (“To recover lost profits, the patent owner must
15 show ‘causation in fact.’”). “A showing under the four-factor Panduit test establishes the
16 required causation.” Versata Software, Inc. v. SAP Am., Inc., 717 F.3d 1255, 1264 (Fed.
17 Cir. 2013) (citing Panduit Corp. v. Stahl Bros. Fibre Works, Inc., 575 F.2d 1152, 1156
18 (6th Cir. 1978)). The four-factor Panduit test requires the patentee to show: “(1) demand
19 for the patented product; (2) absence of acceptable noninfringing substitutes; (3)
20 manufacturing and marketing capability to exploit the demand; and (4) the amount of profit
21 that would have been made.” Presidio Components, Inc. v. Am. Tech. Ceramics Corp.,
22 702 F.3d 1351, 1359–60 (Fed. Cir. 2012). “Causation of lost profits ‘is a classical jury
23 question.’” Versata, 717 F.3d at 1264.

24 i. Available Non-Infringing Alternatives

25 ATC argues that the jury’s finding as to the second prong of the Panduit test – that
26 there is an absence of acceptable noninfringing substitutes – was not supported by
27 substantial evidence. (Doc. No. 402-1 at 4.) Specifically, ATC argues that Presidio failed
28 to bear its burden of demonstrating that ATC’s 560L capacitor was not an available and

1 acceptable noninfringing product during the relevant infringement period. (Id. at 6.)

2 “[T]o be an acceptable non-infringing substitute, the product or process must have
3 been available or on the market at the time of infringement.” Grain Processing, 185 F.3d
4 at 1349 (emphasis removed). “[M]arket sales of an acceptable noninfringing substitute
5 often suffice alone to defeat a case for lost profits.” Id. at 1352. “[A]n available technology
6 not on the market during the infringement can constitute a noninfringing alternative.” Id.
7 at 1351. But, when the alleged alternative is not on the market during the accounting
8 period, a factfinder may reasonably infer that it was not available as a noninfringing
9 substitute, and the accused infringer bears the burden of overcoming this inference by
10 showing that the substitute was actually available during the accounting period. Id. at
11 1353; DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 567 F.3d 1314, 1331 (Fed.
12 Cir. 2009). Further, “the ‘[m]ere existence of a competing device does not make that device
13 an acceptable substitute.’” Presidio, 702 F.3d at 1361.

14 ATC argues that Presidio bears the burden of demonstrating that the 560L capacitor
15 is not an available noninfringing product because the 560L capacitor was on the market
16 during the relevant infringement period. (Doc. No. 402-1 at 6.) The evidence presented at
17 trial showed that ATC sold 88,000 560L capacitors during the relevant infringement
18 period. (Doc. No. 330, Trial Tr. Vol. IV at 25, 213; Doc. No. 331, Trial Tr. Vol. V at 152,
19 174.) But the evidence in the record showed that all of these sales were to a single
20 customer, (id.), and the product is not listed on ATC’s website. (Doc. No. 331, Trial Tr.
21 Vol. V at 167.) Presidio’s damages expert, Mr. Thomas, testified that these sales were
22 made on an as needed basis, and that the 560L capacitor was not widely advertised or
23 touted as a competitive product as to Presidio’s BB capacitor.¹¹ (Id. at 25-27, 29; Doc. No.

24
25
26 ¹¹ ATC renews its contention that the Court should have excluded Mr. Thomas from testifying that
27 the 560L capacitor does not constitute an available noninfringing alternative. (Doc. No. 402-1 at 22-23;
28 see also Doc. No. 251 at 5-11.) The Court again rejects ATC’s contention that the Court should have
excluded this testimony. Mr. Thomas’s testimony was relevant to Presidio’s assertion of lost profit
damages, specifically Panduit factor two: “absence of acceptable noninfringing substitutes.” See
Siemens Med. Sols. USA, Inc. v. Saint-Gobain Ceramics & Plastics, Inc., 637 F.3d 1269, 1288 (Fed.

306, Trial Tr. Vol. III at 202-03.) ATC did not present any evidence disputing these assertions. In addition, Mr. Lambert Devoe, Presidio's product manager and CFO, testified that he was unaware of the 560L capacitor and that no Presidio customer or sales representative has ever mentioned the 560L capacitor to him. (Doc. No. Trial Tr. Vol. II at 10-11.) ATC's own witness testified that the 560 capacitors are not as good as the 550 capacitors. (Doc. No. 330, Trial Tr. Vol. IV at 211.) Further, in contrast to the 88,000 560L capacitors sold during the relevant period, ATC sold over a million 550 capacitors during the relevant period. (See Doc. No. 330, Trial Tr. Vol. IV at 6.) This evidence in the record was sufficient to allow the jury to find that the 560L was not an acceptable non-infringing alternative.

ii. Apportionment

ATC argues that Presidio is not entitled to lost profit damages because it failed to separate or apportion its damages between the patented and unpatented features of the accused products in its lost profits calculation. (Doc. No. 402-1 at 17.) But ATC has failed to show that an apportionment of the jury's damages award is necessary or appropriate in the present circumstances.

Here, the jury was instructed on apportionment¹² and lost profit damages, including

Cir. 2011) ("To be 'available,' an acceptable noninfringing substitute must have been 'available or on the market' at the time of infringement."). Further, ATC's challenges to Mr. Thomas' testimony went to the weight of the testimony and its credibility rather than the admissibility of his opinions. See Alaska Rent-A-Car, Inc. v. Avis Budget Grp., Inc., 738 F.3d 960, 970 (9th Cir. 2013) (affirming the denial of a motion to exclude where the movant's challenges went to "the weight of the testimony and its credibility, not its admissibility").

¹² The Court's instruction on apportionment is as follows:

A damages award-either in the form of lost profits or a reasonable royalty should compensate a patentee only for the inventive aspects of its patent. Therefore, if you find that ATC infringed the '356 patent, your damages award must reflect the value you find attributable to that patent.

Where the accused products have patented and non-patented features, you may consider an apportionment of the damages between the patented features and the unpatented features, so that your award is based only on the value of the patented

1 the Panduit test. (Doc. No. 327 (Court’s Instructions Nos. 30-36, 40).) The jury found that
 2 Presidio established that it should be awarded lost profit damages. (Doc. No. 328 at 4.)
 3 Substantial evidence supports the jury’s finding as to the second prong of the Panduit test.
 4 ATC does not challenge the jury’s findings as to the other prongs of the Panduit test. (See
 5 also Doc. No. 306, Trial Tr. Vol. III at 190-208; Trial Tr. Vol. IV at 1-15 (Mr. Thomas’s
 6 testimony regarding the four Panduit factors).) Under Federal Circuit law, “[a] showing
 7 under the four-factor Panduit test establishes the required causation” for lost profit
 8 damages. Versata, 717 F.3d at 1264; accord Rite-Hite, 56 F.3d at 1545 (“When the
 9 patentee establishes the reasonableness of this inference, e.g., by satisfying the Panduit test,
 10 it has sustained the burden of proving entitlement to lost profits due to the infringing
 11 sales.”). Thus, by satisfying the Panduit test, Presidio met its burden of proving causation
 12 and its entitlement to lost profits. See id. ATC fails to cite to any case holding that, after
 13 a party has satisfied Panduit’s four-factor test and established entitlement to lost profits, a
 14 further apportionment of those profits is required.¹³ Cf. Brocade Commc’ns Sys., Inc. v.
 15 A10 Networks, Inc., No. C 10-3428 PSG, 2013 WL 10601009, at *2 n.12 (N.D. Cal. May
 16 15, 2013) (noting that the Federal Circuit has suggested “that apportionment—at least as
 17 consumer demand stands as a way of showing apportionment—is unnecessary under
 18

19 technology in the Accused Products. On the other hand, if Presidio proves that the patent
 20 covers the infringing product as a whole and that the lost profits it seeks are tied to the
 21 intrinsic value of the patented features, you may award damages for lost profits
 22 attributable to the value of the invention consistent with the Court’s instructions. Presidio
 23 has the burden of proving damages by a preponderance of the evidence. If Presidio
 24 proves infringement of a valid patent, you must award damages in no event less than a
 25 reasonable royalty. Presidio bears the burden to establish a reasonable royalty
 26 attributable to the patented features.

(Doc. No.327 (Court’s Instruction No. 40).) “A jury is presumed to follow its instructions.” Weeks,
 528 U.S. at 234.

¹³ ATC cites to a Federal Circuit case generally holding that “‘apportionment is required even for
 non-royalty forms of damages.’” (Doc. No. 402-1 at 15 (quoting Ericsson, Inc. v. D-Link Sys., Inc., 773
 F.3d 1201, 1226 (Fed. Cir. 2014)). But Ericsson did not involve lost profit damages, and, importantly,
 never holds, to extent there is an apportionment requirement for all forms of damages, satisfaction of the
Panduit test does not satisfy that requirement.

1 Panduit” (citing Versata, 717 F.3d at 1265 (“[T]he Panduit factors place no qualitative
2 requirement on the level of demand necessary to show lost profits.”))).

3 Further, the Federal Circuit has explained that apportionment principles do not apply
4 where the patentee shows that “the patented feature creates the basis for customer demand
5 or substantially creates the value of the component parts.” Virnetx, Inc. v. Cisco Sys.,
6 Inc., 767 F.3d 1308, 1326 (Fed. Cir. 2014). ATC itself contends that customers for
7 broadband capacitors seek bulk capacitance and low insertion loss at high frequencies and
8 those requirements are what drives customers to buy the accused products. (Doc. No. 433
9 at 11.) Dr. Huebner, testified that although the accused products contain some internal
10 capacitances that help with high frequency performance, the highest frequency
11 performance of the capacitors is achieved by the claimed fringe-effect capacitance. (Doc.
12 No. 306, Trial Tr. Vol. III at 162-63; see also id. at 27-29, 38-53, 57-63; Doc. No. 331,
13 Trial Tr. Vol. V at 222; Doc. No. 330, Trial Tr. Vol. IV at 32-33, 35-37.) Accordingly,
14 there was sufficient evidence in the record for the jury to find that the patented feature
15 creates the basis for customer demand or substantially creates the value of the accused
16 products.

17 Moreover, the Federal Circuit has held that apportionment principles do not apply
18 when the accused product is the smallest saleable unit, and the asserted claims “cover[] the
19 infringing product as a whole, not a single component of a multi-component product.”
20 AstraZeneca AB v. Apotex Corp., 782 F.3d 1324, 1338 (Fed. Cir. 2015); see Virnetx, Inc.
21 v. Cisco Sys., Inc., 767 F.3d 1308, 1326-27 (Fed. Cir. 2014). ATC does not dispute
22 Presidio’s assertion that the 550 capacitors are the smallest saleable units, (see Doc. No.
23 433 at 9), and there was substantial evidence supporting the jury’s finding that the asserted
24 claims of the ’356 patent cover the accused products as a whole. The asserted claims cover
25 an entire multilayer capacitor, and the accused products are multilayers capacitors.¹⁴ See
26 _____

27 ¹⁴ ATC argues that Presidio did not invent the multilayer capacitor. (Doc. No. 433 at 8.) This may
28 be true, but this fact is of no consequence. In AstraZeneca, the Federal Circuit found that apportionment
of the damages base at issue was not necessary because the claims covered the product as a whole – “the

1 '356 Patent at 13:26-28, 14:1-2, 14:9-16; '356 Patent Dec. 8, 2015 Reexamination
 2 Certificate at 1:23-2:9. Presidio's infringement expert Dr. Huebner explained how the
 3 components in the accused products satisfy the various limitations contained in the asserted
 4 claims. (See Doc. No. 305, Trial Tr. Vol. II. at 243-44, 249-65; Doc. No. 306, Trial Tr.
 5 Vol. III at 1-80.) ATC argues that the asserted claims do not cover all of the features of
 6 the accused products because the accused products contain internal electrodes that have a
 7 unique shape and follow the teachings in U.S. Patent No. 8,446,705. (Doc. No. 402-1 at
 8 18-19.) But Dr. Huebner testified that the accused products' internal electrodes satisfy the
 9 '356 patent's claim limitations of a "conductive first plate disposed within the dielectric
 10 body" and a "conductive second plate disposed within the dielectric body and forming a
 11 capacitor with the first plate." (Doc. No. 306, Trial Tr. Vol. III at 7-8, 13-14, 16, 18.)
 12 Accordingly, there was sufficient evidence in the record for the jury to determine that the
 13 asserted claims cover the accused products as a whole.

14 In sum, the Court rejects ATC's arguments that the jury's damages award cannot
 15 stand because Presidio failed to properly apportion its requested damages. Cf. Virnetx,
 16 767 F.3d at 1328 ("[W]e have never required absolute precision in [assigning value to the
 17 patented feature]; on the contrary, it is well-understood that this process may involve some
 18 degree of approximation and uncertainty."). Accordingly, the Court denies ATC's motion
 19 for judgment as a matter of law of no lost profits, or in the alternative, for a new trial on
 20 the issue of lost profit damages.

21 **II. Presidio's Motion for a Permanent Injunction**

22 Presidio moves for the entry of a permanent injunction, enjoining ATC from
 23 marketing, selling, or offering to sell its 550 capacitors. (Doc. No. 373-1.) The Patent Act
 24 provides a patentee with the "right to exclude others from making, using, offering for sale,
 25 or selling the [patented] invention." 35 U.S.C. § 154(a)(1). "In furtherance of this right to
 26 _____

27 drug core, the enteric coating, and the subcoating." 782 F.3d at 1338. The Federal Circuit reached this
 28 determination without also finding that AstraZeneca invented a drug core, enteric coating, or subcoating.
 See id.

1 exclude, district courts ‘may grant injunctions in accordance with the principles of equity
2 to prevent the violation of any right secured by patent, on such terms as the court deems
3 reasonable.’” Apple Inc. v. Samsung Elecs. Co., 809 F.3d 633, 638 (Fed. Cir. 2015)
4 (quoting 35 U.S.C. § 283).

5 For a permanent injunction to issue, the party requesting an injunction must
6 demonstrate that: (1) it has suffered an irreparable injury; (2) legal remedies, such as money
7 damages, are inadequate to compensate for that injury; (3) the balance of hardships
8 warrants an injunction; and (4) the public interest would not be disserved by an injunction.
9 eBay Inc. v. MercExchange, LLC, 547 U.S. 388, 391 (2006). The Federal Circuit has
10 explained that “[t]his analysis proceeds with an eye to the ‘long tradition of equity practice’
11 granting ‘injunctive relief upon a finding of infringement in the vast majority of patent
12 cases.’” Presidio, 702 F.3d at 1362; see also Robert Bosch LLC v. Pylon Mfg. Corp., 659
13 F.3d 1142, 1149 (Fed. Cir. 2011) (“Although eBay abolishes our general rule that an
14 injunction normally will issue when a patent is found to have been valid and infringed, . .
15 . it does not follow that courts should entirely ignore the fundamental nature of patents as
16 property rights granting the owner the right to exclude.”). “The decision to grant or deny
17 permanent injunctive relief is an act of equitable discretion by the district court, reviewable
18 on appeal for abuse of discretion.” eBay, 547 U.S. at 391.

19 A. Irreparable Harm

20 “To satisfy the first eBay factor, the patentee must show that it is irreparably harmed
21 by the infringement.” Apple Inc. v. Samsung Elecs. Co., 809 F.3d 633, 639 (Fed. Cir.
22 2015). “[F]acts relating to the nature of the competition between the parties undoubtedly
23 are relevant to the irreparable harm inquiry.” Robert Bosch, 659 F.3d at 1150. ATC and
24 Presidio are direct competitors. ATC’s 550 capacitors directly compete with Presidio’s
25 BB capacitors.¹⁵ (Doc. No. 304, Trial Tr. Vol. I at 143-44; Doc. No. 305, Trial Tr. Vol. II
26

27 ¹⁵ The Court notes that in finding that Presidio established entitlement to lost profit damages
28 through the Panduit test, the jury necessarily found that ATC’s 550 capacitors directly compete with
Presidio’s BB capacitors. See Presidio, 702 F.3d at 1360.

1 at 1-2, 119; Doc. No. 306, Trial Tr. Vol. III at 194, 196.) They are sold in the same market
2 and to the same customers and potential customers. (See id.) “Direct competition in the
3 same market is certainly one factor suggesting strongly the potential for irreparable harm
4 without enforcement of the right to exclude.” Presidio, 702 F.3d at 1363. This is because
5 “[w]here two companies are in competition against one another, the patentee suffers the
6 harm—often irreparable—of being forced to compete against products that incorporate and
7 infringe its own patented inventions.” Douglas Dynamics, LLC v. Buyers Products Co.,
8 717 F.3d 1336, 1345 (Fed. Cir. 2013).

9 Further, Presidio has never licensed the ’356 patent to anyone. (Doc. No. 305, Trial
10 Tr. Vol. II at 21-22.) “Presidio’s unwillingness to license favor[s] finding irreparable
11 injury.”¹⁶ Presidio, 702 F.3d at 1363.

12 The jury’s lost profits award also supports a finding of irreparable injury. In finding
13 that Presidio established that it is entitled to lost profit damages, “the jury necessarily found
14 ATC’s [550] capacitor sales caused Presidio to lose BB capacitor sales. This squarely
15 supports a finding of irreparable harm.” Presidio, 702 F.3d at 1363; see Douglas
16 Dynamics, 717 F.3d at 1344 (“Irreparable injury encompasses different types of losses that
17 are often difficult to quantify, including lost sales . . .”). In sum, this evidence is sufficient
18 to demonstrate irreparable injury. See Presidio, 702 F.3d at 1363-64; Douglas Dynamics,
19 717 F.3d at 1344-45.

20 To satisfy the first eBay factor, the patentee must not only demonstrate irreparable
21 injury, but also prove that the harm is caused by the infringement. Apple, 809 F.3d at 639.
22 “This requires proof that a ‘causal nexus relates the alleged harm to the alleged
23

24
25 ¹⁶ ATC argues that Presidio’s failure to license the ’356 patent should be given no weight because
26 the amended claims at issue only came into existence on December 8, 2015 when the reexamination
27 certificate for the ’356 patent issued. (Doc. No. 409-1.) But even if the Court only considers the period
28 from December 8, 2015 to the present, the evidence in the record shows that Presidio consciously
decided not to license the ’356 patent during that period. (Doc. No. 305, Trial Tr. Vol. II at 21-22.)
This decision favors a finding of irreparable injury. See Presidio, 702 F.3d at 1363.

1 infringement.” Id. “[P]roving a causal nexus requires the patentee to show ‘some
 2 connection’ between the patented features and the demand for the infringing products.” Id.
 3 at 641 (“The district court should have determined whether the record established that [the
 4 infringing] feature impacts customers’ purchasing decisions.”). ATC itself contends that
 5 customers for broadband capacitors seek bulk capacitance and low insertion loss at high
 6 frequencies and those requirements are what drives customers to buy the accused products.
 7 (Doc. No. 409-1 at 11; Doc. No. 433 at 11.) Dr. Huebner, testified that although the
 8 accused products contain some internal capacitances that help with high frequency
 9 performance, the highest frequency performance of the capacitors is achieved by the
 10 claimed fringe-effect capacitance.¹⁷ (Doc. No. 306, Trial Tr. Vol. III at 162-63; see also
 11 id. at 27-29, 38-53, 57-63; Doc. No. 331, Trial Tr. Vol. V at 222.) This evidence is
 12 sufficient to satisfy the nexus requirement. Cf. Apple Inc. v. Samsung Elecs. Co., 735 F.3d
 13 1352, 1362 (Fed. Cir. 2013) (characterizing broadband capacitors as “relatively simple
 14 products” and noting that the causal nexus requirement is more easily satisfied for “simple”
 15 products); see also Broadcom Corp. v. Emulex Corp., 732 F.3d 1325, 1337 (Fed. Cir. 2013)
 16 (“As direct competitors in a limited market, [plaintiff]’s harm was clearly linked to
 17 [defendant]’s infringement of [plaintiff]’s patent property rights.”).

18 ATC argues that Presidio cannot establish a causal nexus because Presidio’s BB
 19 capacitor, which does not practice the invention claimed in the ’356 patent, competes in
 20 the same market as ATC’s 550 capacitors. (Doc. No. 409-1 at 14-15.) But the Federal
 21 Circuit explained in the prior litigation that “[e]ven without practicing the claimed
 22 invention, the patentee can suffer irreparable injury.” Presidio, 702 F.3d at 1363.

24 ¹⁷ The Court rejects ATC’s contention that it established at trial that the high frequency
 25 performance of the accused products is derived solely from their internal electrodes. (Doc. No. 409-1 at
 26 11-14.) Presidio’s expert, Dr. Huebner, never conceded at trial that the 550 capacitors achieve their high
 27 frequency performance solely from their internal electrodes. (See Doc. No. 306, Trial Tr. Vol. III at
 28 127, 162-63; Doc. No. 331, Trial Tr. Vol. V at 220-23.) To the contrary, he specifically testified that
 although the accused products contain some internal capacitances that help with high frequency
 performance, the highest frequency performance of the capacitors is achieved by the claimed fringe-
 effect capacitance. (Doc. No. 306, Trial Tr. Vol. III at 162-63.)

1 ATC also argues that Presidio has failed to establish irreparable injury because any
2 harm Presidio has suffered was caused by lawful “design wins” that occurred prior to
3 December 8, 2015. (Doc. No. 409-1 at 15-18.) ATC contends that an injunction cannot
4 be entered on account of otherwise lawful competition. (*Id.* at 15.) The Court recognizes
5 that under its intervening rights ruling, ATC is not liable for damages for any sales of 550
6 capacitors prior to December 8, 2015. (Doc. No. 234 at 28.) But those sales and the
7 resulting harm caused by the sales became infringing and unlawful on December 8, 2015
8 once the reexamination certificate with the amended claims issued. ATC’s ongoing sales
9 of infringing products, whether resulting from new or historical design wins, result in
10 irreparable harm to Presidio. Further, the Federal Circuit has explained that “[t]he causal
11 nexus requirement ensures that an injunction is only entered against a defendant on account
12 of a harm resulting from the defendant’s wrongful conduct, [and] that an injunction is not
13 entered on account of ‘irreparable harm caused by otherwise lawful competition.’” *Apple*,
14 809 F.3d at 640. Here, Presidio has satisfied the causal nexus requirement.

15 ATC next argues that Presidio’s nearly five-year delay in filing suit against ATC’s
16 550 capacitors weighs against a finding of irreparable injury. A period of delay is one
17 circumstance that a district court may consider in the context of the totality of the
18 circumstances when evaluating irreparable harm. *See Hybritech Inc. v. Abbott Labs.*, 849
19 F.2d 1446, 1457 (Fed. Cir. 1988); *Apple, Inc. v. Samsung Elecs. Co.*, 678 F.3d 1314, 1325
20 (Fed. Cir. 2012).¹⁸ But “a showing of delay does not preclude, as a matter of law, a
21 determination of irreparable harm.” *Hybritech*, 849 F.2d at 1457. Further, the Court in the
22 prior litigation entered an amended judgment following the parties’ appeals on September
23 19, 2013, and denied Presidio’s motion for relief from judgment on January 27, 2014.
24 *Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, No. 08-cv-335-GPC (Doc. Nos.

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26
27 ¹⁸ The Court notes that these two cases involved a motion for a preliminary injunction, not a
28 motion for a permanent injunction. *Cf. Lerner Ger. GmbH v. Lerner Corp.*, 94 F.3d 1575, 1577 (Fed.
Cir. 1996) (“[Preliminary and permanent injunctions] are distinct forms of equitable relief that have
different prerequisites and serve entirely different purposes.”).

1 480, 490). Presidio filed the present action on September 2, 2014. (Doc. No. 1.) The
2 Court finds that Presidio acted reasonably in waiting for the prior litigation to be fully
3 resolved prior to filing the present lawsuit. See A.C. Aukerman Co. v. R.L. Chaides Const.
4 Co., 960 F.2d 1020, 1033 (Fed. Cir. 1992) (en banc) (listing “other litigation” as a
5 permissible excuse for a delay in filing suit). Accordingly, any delay in filing the present
6 action was reasonable and permissible and does not weigh against a finding of irreparable
7 injury.

8 Finally, ATC argues that Presidio’s inability or refusal to make certain capacitors or
9 sell its capacitors to certain customers also shows a lack of irreparable harm. (Doc. No.
10 409-1 at 19-22.) First, ATC argues that Presidio is not suffering irreparable harm from
11 ATC’s sales of its 550U (100 nF) and 550S (50 volts rating) capacitors because Presidio
12 has no competing product for those specific capacitors and thus could not have made those
13 sales. (Id. at 19-20.) But this argument is inconsistent with the jury’s verdict. In awarding
14 Presidio lost profits damages, the jury necessarily found that Presidio would have made the
15 sales that were made by ATC for all of the accused products. See Rite-Hite, 56 F.3d at
16 1545 (“To recover lost profits damages, the patentee must show a reasonable probability
17 that, ‘but for’ the infringement, it would have made the sales that were made by the
18 infringer.”). The jury’s verdict was not limited to any specific types of accused products.
19 (See Doc. No. 328 at 4.) Second, ATC argues that Presidio is not suffering harm from
20 ATC’s sales of 550 capacitors to certain customers because either Presidio has decided not
21 to do business with those customers or those customers will not buy from Presidio. ATC’s
22 contention that Presidio will not do business with these customers is not supported by the
23 record. The evidence presented at trial shows that Presidio is willing to do business with
24 and sell its capacitors to those specific customers. (Doc. No. 305, Trial Tr. Vol. II at 15-
25 20; Doc. No. 415-3, Devoe Decl. ¶¶ 7-9.) Indeed, the evidence showed that Presidio
26 actively sells its BB capacitors to two of the identified customers. (Doc. No. 305, Trial Tr.
27 Vol. II at 15; Doc. No. 415-3, Devoe Decl. ¶ 9.) Further, the evidence presented by ATC
28 only shows that those two customers have currently decided not to buy Presidio capacitors

1 and are instead buying ATC's 550 capacitors. (Doc. No. 409-11, Ex. 32; Doc. No. 409-
2 14, Ex. 35; Doc. No. 409-2, Tessaro Decl. ¶¶ 5-6.) The evidence does not show that these
3 customers would still refuse to buy Presidio's capacitors if the 550 capacitors were
4 removed from the market. Accordingly, ATC has failed to show that Presidio is unable to
5 make sales to those companies.

6 In sum, Presidio has shown that it has suffered irreparable harm that is caused by
7 ATC's infringement. The Court rejects ATC's arguments to the contrary. Accordingly,
8 Presidio has satisfied the first eBay factor.

9 B. Inadequate Remedy at Law

10 "The second eBay factor is whether 'remedies available at law, such as monetary
11 damages, are inadequate to compensate' for the irreparable harm suffered by the patentee."
12 Apple, 809 F.3d at 644–45. ATC itself asserts that the accused products operate within a
13 "design win" market. (Doc. No. 409-1 at 6-10.) The Federal Circuit has explained that
14 "the structural nature of a design win market favors a finding that monetary damages are
15 inadequate." Broadcom Corp. v. Qualcomm Inc., 543 F.3d 683, 703 (Fed. Cir. 2008)
16 (internal quotation marks omitted); see also, e.g., Broadcom, 732 F.3d at 1336, 1338
17 (affirming district court's finding that "money damages were inadequate to compensate
18 [plaintiff] largely due to incumbency effects from the design-win market conditions").

19 Presidio's decision not to license the '356 patent also supports a finding that
20 monetary damages are inadequate. See Acumed LLC v. Stryker Corp., 551 F.3d 1323,
21 1328 (Fed. Cir. 2008) (finding whether the patentee has licensed the invention relevant to
22 the determination of whether money damages are adequate). Further, this factor favors an
23 injunction where "[t]here is no reason to believe that [the defendant] will stop infringing,
24 or that the irreparable harms resulting from its infringement will otherwise cease, absent
25 an injunction." Robert Bosch, 659 F.3d at 1155. Presidio has presented the Court with
26 evidence showing that ATC continues to offer the accused products for sale even after the
27 jury's verdict. (Doc. No. 372-2, Ex. A.) Further, ATC has represented to the Court that it
28 does not intend to discontinue the accused products until an injunction is entered. (Doc.

1 No. 409-1 at 30.) Accordingly, there is no reason to believe that ATC will stop infringing
2 absent an injunction, and Presidio has established that money damages are insufficient to
3 compensate for the irreparable harm it has suffered.

4 C. Balance of Hardships

5 “To satisfy the third eBay factor, the patentee must show that the balance of
6 hardships weighs in its favor.” Apple, 809 F.3d at 645. The balance to be “considered is
7 only between a plaintiff and a defendant.” Acumed LLC v. Stryker Corp., 551 F.3d 1323,
8 1330 (Fed. Cir. 2008).

9 ATC’s infringement harmed Presidio by causing lost sales and by forcing Presidio
10 to compete against its own patented invention, which places a substantial hardship on
11 Presidio. See Apple, 809 F.3d at 646 (“Samsung’s infringement harmed Apple by causing
12 lost market share and lost downstream sales and by forcing Apple to compete against its
13 own patented invention, which ‘places a substantial hardship’ on a patentee, especially here
14 where it is undisputed that it is essentially a two-horse race.”); Robert Bosch, 659 F.3d at
15 1156. ATC argues that it will suffer hardships from a permanent injunction because it has
16 made substantial investments in the development of its 550 series of capacitors, and an
17 abrupt termination of sales would cause it to suffer customer alienation and loss of
18 reputation. (Doc. No. 409-1 at 26-27.) But the Federal Circuit has explained that the
19 consequences of a defendant’s infringement, such as sunk development costs or loss of
20 business, is irrelevant to this factor.¹⁹ See i4i Ltd. P’ship v. Microsoft Corp., 598 F.3d 831,
21 863 (Fed. Cir. 2010); see also Broadcom, 543 F.3d at 704 (“‘[O]ne who elects to build a
22 business on a product found to infringe cannot be heard to complain if an injunction against
23 continuing infringement destroys the business so elected.’”). In addition, the Court further
24 notes that any potential hardship on ATC would be mitigated by the Court’s inclusion of a
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26
27 ¹⁹ The Court also rejects ATC’s argument that it will suffer hardship because it is difficult for ATC
28 to know how to modify its capacitors to make them non-infringing. (Doc. No. 409-1 at 28-29.) It has
been ATC’s contention throughout this litigation that the 560L capacitor that it already manufactures
and sells does not infringe the ’356 patent. (Doc. No. 202 at 66; Doc. No. 402-1.)

1 90-day sunset provision into the requested injunction. See Broadcom, 543 F.3d at 704
2 (finding that inclusion of a sunset provision can ameliorate the potential hardships of an
3 injunction).

4 “[T]he parties’ sizes, products, and revenue sources” are also relevant factors for
5 balancing the hardships. Id., 598 F.3d at 862. Presidio asserts that ATC and its parent
6 company AVX have tens of millions of dollars in cash and a total market cap exceeding
7 two billion, while Presidio is a small, family-owned company. (Doc. No. 373-1 at 20
8 (citing Doc. No. 373-15, Ex. N); Doc. No. 415 at 11; see also Doc. No. 414 at 7-8.) ATC
9 does not contest these assertions. Accordingly, this factor weighs in favor of issuing an
10 injunction.

11 D. Public Interest

12 “The fourth eBay factor requires the patentee to show that ‘the public interest would
13 not be disserved by a permanent injunction.’” Apple, 809 F.3d at 646. “[T]he public is
14 best served by enforcing patents that are likely valid and infringed.” Abbott Labs. v. Andrx
15 Pharm., Inc., 452 F.3d 1331, 1348 (Fed. Cir. 2006). “As a result, the public interest nearly
16 always weighs in favor of protecting property rights in the absence of countervailing
17 factors.” Apple, 809 F.3d at 647.

18 ATC argues that the public interest would be disserved by an injunction because the
19 accused products provide unusual societal benefits to critical government, military, space,
20 and infrastructure applications. (Doc. No. 409-1 at 29-30.) ATC argues that enjoining the
21 550 capacitors would cause important government, military, space, and infrastructure
22 projects to suffer. (Id.) The Court rejects ATC’s contention that its products provide
23 unusual societal benefits. Cf. Apple, 809 F.3d at 647 (“[The patentee] does not seek to
24 enjoin the sale of lifesaving drugs.”). The evidence ATC presented in support of this
25 contention only shows that ATC has certain government and infrastructure clients that have
26 purchased 550 capacitors and would prefer to be able to continue to purchase them in the
27 future. (Doc. No. 409-3, Rabe Decl. ¶¶ 10-14; Doc. No. 409-2, Tessaro Decl. ¶¶ 5-6.)
28 ATC and its evidence fails to specifically identify any government, military, space or

1 infrastructure projects that would actually suffer if the 550 capacitors were removed from
2 the market. ATC has not established that these unnamed projects could not continue with
3 the use of other products.²⁰ Further, the Court notes that any potential harm to the public
4 would be mitigated by the inclusion of a 90-day sunset provision into the requested
5 injunction. See Broadcom, 543 F.3d at 704 (“[T]he sunset provisions mitigate the harm to
6 the public.”). Accordingly, this factor favors entry of a permanent injunction.

7 E. Conclusion

8 Weighing the above factors and the equities in this case, the Court, exercising its
9 sound discretion, concludes that a permanent injunction is appropriate. Accordingly, the
10 Court grants Presidio’s motion for a permanent injunction. The Court will enter the
11 permanent injunction in a separate order.

12 i. Presidio’s Proposed Injunction

13 Presidio has submitted a proposed permanent injunction. (Doc. No. 373-16, Ex. O.)
14 In paragraph three of its proposed permanent injunction, Presidio proposes the following
15 language:

16 It is hereby Ordered that ATC and its successors, assigns, officers,
17 agents, servants, employees, and persons in active concert or participation
18 with them, including any parent and subsidiary entities during the period
19 commencing on the date hereof and through the date of expiration of the ‘356
20 patent are hereby enjoined and restrained from infringing Claims 1-5, 16, and
21 18-19 of the ‘356 patent and are further hereby enjoined and restrained from
22 making, using, selling, or offering to sell in the United States, or importing
23 into the United States: the 550L, 550Z, 550S, and 550U capacitors; any other
24 product that is only colorably different from the 550L, 550Z, 550S, and 550U
25 capacitors.

26 ²⁰ The Court finds ATC’s inability to specifically identify any concrete harm that would occur
27 significant in light of the fact that ATC previously discontinued its 545L capacitor after that capacitor
28 was found to infringe the ‘356 patent in the prior litigation. Yet ATC cannot identify any concrete harm
that resulted from the discontinuance of that product, particularly in light of counsel’s prior
representations to the Court that the 545L capacitors performed better than the 550 capacitors. (Doc.
No. 211 at 29-30.)

1 (Id.)

2 The Court adopts the majority of the language contained in Presidio's proposed
3 permanent injunction. The Court rejects Presidio's inclusion of ATC's "successors,
4 assigns," and "parent and subsidiary entities" into the language of the injunction. The
5 Federal Circuit has explained that "Rule 65(d) of the Federal Rules of Civil Procedure
6 specifies the proper form and scope of an injunction issued by a district court." Int'l
7 Rectifier Corp. v. IXYS Corp., 383 F.3d 1312, 1315 (Fed. Cir. 2004). Rule 65(d)(2)
8 provides: Every order granting an injunction "binds only the following . . . : (A) the parties;
9 (B) the parties' officers, agents, servants, employees, and attorneys; and (C) other persons
10 who are in active concert or participation with anyone described in Rule 65(d)(2)(A) or
11 (B)." Rule 65(d) does not list successors, assigns, parents, and subsidiaries as those among
12 whom an injunction may be made binding upon. See Eli Lilly & Co. v. Premo Pharm.
13 Labs., Inc., 843 F.2d 1378, 1381 (Fed. Cir. 1988) ("Rule 65(d) . . . does not include
14 successors and assigns as among those whom an injunction is 'binding only upon.'").

15 The Court also excludes from the injunction the language stating that ATC is
16 "enjoined and restrained from infringing Claims 1-5, 16, and 18-19 of the '356 patent."
17 "In the patent infringement context, [the Federal Circuit] has rejected as overly broad a
18 permanent injunction that simply prohibits future infringement of a patent." Int'l Rectifier,
19 383 F.3d at 1316. The Federal Circuit has explained that "the only acts the injunction may
20 prohibit are infringement of the patent by the adjudicated devices and infringement by
21 devices not more than colorably different from the adjudicated devices." Id.; see also, e.g.,
22 Additive Controls & Measurement Sys., Inc. v. Flowdata, Inc., 986 F.2d 476, 479–80 (Fed.
23 Cir. 1993) (rejecting permanent injunction where the order did "not state which acts of
24 [defendant] constitute infringement of the . . . patent" and the order did "not limit its
25 prohibition to the manufacture, use, or sale of the specific infringing device, or to infringing
26 devices no more than colorably different from the infringing device"). In addition, the
27 Court notes that similar modifications were made to Presidio's proposed permanent
28 injunction in the prior litigation on these same grounds. See Presidio Components, Inc. v.

1 Am. Tech. Ceramics Corp., No. 08-cv-335-GPC (Doc. No. 473 at 17-19).

2 ii. ATC's Request for a Stay Pending Appeal and a Sunset Provision

3 ATC argues that in the event the Court grants Presidio's motion for a permanent
4 injunction, the Court should stay the injunction pending an appeal and provide a one-year
5 sunset provision in the injunction. (Doc. No. 409-1 at 31.) In deciding whether to grant a
6 stay pending appeal, the Court "assesses the movant's chances of success on the merits and
7 weighs the equities as they affect the parties and the public." E.I. du Pont de Nemours &
8 Co. v. Phillips Petroleum Co., 835 F.2d 277, 278 (Fed. Cir. 1987); accord Standard Havens
9 Prods. v. Gencor Indus., 897 F.2d 511 (Fed. Cir. 1990). Exercising its sound discretion,
10 the Court declines to stay the injunction pending appeal. Based on the Court's review of
11 the record and the totality of the circumstances in this case, the Court concludes that ATC
12 has failed to demonstrate a likelihood of success on appeal. Indeed, in its request, ATC
13 fails to even address this factor. Further, the Court concludes that the equities do not weigh
14 in favor of granting a stay.

15 Exercising its sound discretion, the Court declines to include the requested one-year
16 sunset provision into the permanent injunction, but will include a 90-day sunset provision.
17 ATC has had ample time and notice to prepare for the possibility that this Court would
18 enter a permanent injunction in this action. A permanent injunction was entered in the
19 prior litigation. Presidio Components, Inc. v. Am. Tech. Ceramics Corp., No. 08-cv-335-
20 GPC (Doc. No. 473 at 19); see also Presidio, 702 F.3d at 1362-63. The jury rendered its
21 infringement verdict and awarded Presidio lost profit damages on April 18, 2016 – several
22 months ago. (Doc. No. 328.) The Court issued its memorandum decision rejecting ATC's
23 invalidity and equitable defenses on June 17, 2016 – two months ago. (Doc. No. 368.) The
24 Court concludes that under the totality of the circumstances a one-year sunset provision is
25 unnecessary and, instead, a 90-day sunset provision is appropriate.²¹ Accordingly, the

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27 ²¹ At the hearing, Presidio stated that it would not object to the inclusion of a 90-day sunset
28 provision into the permanent injunction.

1 Court includes a 90-day sunset provision into its permanent injunction.

2 **IV. Presidio's Motion for Enhanced Damages**

3 Presidio moves for an award of enhanced damages pursuant to 28 U.S.C. § 284.
4 (Doc. No. 377-1 at 3-24.) Section 284 provides that a court “may increase the damages up
5 to three times the amount found or assessed.” 35 U.S.C. § 284. In Halo Elecs., Inc. v.
6 Pulse Elecs., Inc., the Supreme Court held that “[s]ection 284 gives district courts the
7 discretion to award enhanced damages against those guilty of patent infringement.”²² 136
8 S. Ct. at 1935. But the Supreme Court further explained that although “[d]istrict courts
9 enjoy discretion in deciding whether to award enhanced damages, and in what amount”,
10 that discretion is not without limits. Id. at 1932.

11 Enhanced damages are generally appropriate under § 284 only in “egregious cases”
12 of misconduct beyond typical infringement and should not be awarded in “garden-variety
13 cases.” Id. at 1932, 1934-35. “The sort of conduct warranting enhanced damages has been
14 variously described . . . as willful, wanton, malicious, bad-faith, deliberate, consciously
15 wrongful, flagrant, or – indeed – characteristic of a pirate.” Id. at 1932. The culpability of
16 the infringer should be “measured against the knowledge of the actor at the time of the
17 challenged conduct.” Id. at 1933. In determining whether enhanced damages are
18 appropriate, “courts should . . . take into account the particular circumstances of each case.”
19 Id.; see also id. at 1935 (“In applying this discretion, district courts are ‘to be guided by
20 [the] sound legal principles’ developed over nearly two centuries of application and
21 interpretation of the Patent Act.”).

22 In Halo, the Supreme Court also explained that entitlement to enhanced damages
23 need only be proven by a preponderance of the evidence. Id. at 1934. And a district court’s
24 determination of whether to award enhanced damages is reviewed for abuse of discretion
25

26 ²² In Halo, the Supreme Court rejected the Federal Circuit’s Seagate test for determining whether
27 enhanced damages are appropriate as “unduly rigid,” as “it impermissibly encumbers [section 284’s]
28 grant of discretion to district courts.” 136 S. Ct. at 1932; see also id. at 1933-34 (“Section 284 permits
district courts to exercise their discretion in a manner free from the inelastic constraints of the Seagate
test.”).

1 on appeal. Id.

2 After reviewing the particular circumstances in this case, including the record and
3 the parties' arguments, the Court, exercising its sound discretion, declines to award
4 Presidio enhanced damages. The Court begins by noting that the jury found that ATC
5 willfully infringed the '356 patent, (Doc. No. 328 at 4), and the Court has denied ATC's
6 post-trial motion challenging the jury's willfulness finding. See supra. But both the
7 Supreme Court in Halo and the Federal Circuit in WBIP have held an award of enhanced
8 damages need not follow a finding of willful infringement. See Halo, 136 S. Ct. at 1933
9 ("[N]one of this is to say that enhanced damages must follow a finding of egregious
10 misconduct."); WBIP, 2016 WL 3902668, at *15 n.13 ("[T]his is not to say that a jury
11 verdict of willful infringement ought to result in enhanced damages."). Thus, the Court
12 may still exercise its discretion and decline to award enhanced damages based on the
13 particular circumstances in this case even though there has been a finding of willful
14 infringement.²³ See id.; see, e.g., Trustees of Boston Univ. v. Everlight Elecs. Co., No. 12-
15 11935-PBS, 2016 WL 3976617, at *3 (D. Mass. July 22, 2016) (finding, in its discretion,
16 that the case did not warrant an award of enhanced damages even though the jury found
17 willful infringement).

18 Here, the unique circumstances of this case do not warrant an award of enhanced
19 damages. At the summary judgment stage, the Court granted ATC's motion for summary
20 judgment in its favor on its defense of absolute intervening rights. (Doc. No. 234.) In that
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22
23 ²³ Presidio argues that a jury's finding of willful infringement creates a presumption in favor of an
24 award of enhanced damages. The Court rejects Presidio's contention. First, Halo itself contains no
25 mention of a presumption in favor of enhanced damages upon a finding of willful infringement. Second,
26 and more importantly, the case Presidio cites in support of its argument does not mention a presumption
27 in favor of enhanced damages upon a finding of willful infringement. (See Doc. No. 377-1 at 5 (citing
28 Jurgens v. CBK, Ltd., 80 F.3d 1566, 1572 (Fed. Cir. 1996)).) The Federal Circuit's decision in Jurgens
never refers to a presumption in favor of an award of enhanced damages. The Jurgens court only held
that "[u]pon a finding of willful infringement, a trial court should provide reasons for not increasing a
damages award or for not finding a case exceptional for the purpose of awarding attorneys fees." 80
F.3d at 1572. Thus, even assuming the Jurgens standard still applies post-Halo, this Court's decision
complies with Jurgens as the Court provides its reasoning for not awarding enhanced damages.

1 order, the Court held that due to Presidio narrowing the asserted claims during
2 reexamination proceedings, Presidio is only entitled to infringement damages for the time
3 period following the issuance of the December 8, 2015 reexamination certificate. (*Id.* at
4 28.) Thus, the period of infringement in the present case began on December 8, 2015.

5 This fact is important to the Court's analysis because, in *Halo*, the Supreme Court
6 explained that an infringer's culpability should be measured at the time of the challenged
7 conduct. 136 S. Ct. at 1933; *see also* *WBIP*, 2016 WL 3902668, at *15 ("[A]s the Supreme
8 Court explained in *Halo*, timing does matter."). ATC began selling the accused products
9 in January 2010. Under the Court's intervening rights ruling, ATC is not liable for any
10 sales of 550 capacitors that occurred prior to December 8, 2015. Therefore, at the time
11 infringement of the asserted claims began on December 8, 2015, ATC had already been
12 permissibly selling the accused products without being subject to damages liability for
13 almost six years. Moreover, at the time infringement began, Presidio and ATC were well
14 into the present litigation. Specifically, by December 8, 2015, ATC had received the
15 Court's claim construction order, developed noninfringement and invalidity theories that
16 were supported by expert reports, and filed motions for summary judgment on several
17 issues. (Doc. No. 149.) By December 8, 2015, ATC had also just succeeded in causing
18 Presidio to substantively narrow the scope of the asserted claims in reexamination
19 proceedings that ATC instituted. Thus, under the unique circumstances of the present case,
20 the Court declines to find that the willful infringement that occurred in the case after
21 December 8, 2015 constitutes an "egregious" case of misconduct warranting an award of
22 enhanced damages. Rather, the present action was a "garden-variety" hard-fought patent
23 infringement action between two competitors.

24 Moreover, the Court notes that Presidio's invalidity defense at trial, although
25 ultimately rejected by the Court, was not meritless. The Court also notes that there was no
26 evidence of bad faith or litigation misconduct by ATC in this action. Accordingly, the
27 Court, exercising its sound discretion, declines to award enhanced damages. The Court
28 denies Presidio's motion for enhanced damages.

V. Presidio's Motion for Attorney's Fees

Presidio also moves for attorney's fees pursuant to 35 U.S.C. § 285. (Doc. No.377-1 at 25-30.) "Section 285 of the Patent Act authorizes a district court to award attorney's fees in patent litigation." Octane Fitness, LLC v. ICON Health & Fitness, Inc., 134 S. Ct. 1749, 1752 (2014). Section 285 provides: "The court in exceptional cases may award reasonable attorney fees to the prevailing party." 35 U.S.C. § 285. "When deciding whether to award attorney fees under § 285, a district court engages in a two-step inquiry." MarcTec, LLC v. Johnson & Johnson, 664 F.3d 907, 915 (Fed. Cir. 2012). The court first determines whether the prevailing party has proven that the case is "exceptional," and, if so, the court then determines whether an award of attorney's fees is justified. Id. at 1915-16.

The Supreme Court has held that "an 'exceptional' case is simply one that stands out from others with respect to the substantive strength of a party's litigating position (considering both the governing law and the facts of the case) or the unreasonable manner in which the case was litigated." Octane Fitness, 134 S. Ct. at 1756 (stating that "exceptional" means "'uncommon,' 'rare,' or 'not ordinary'"). "District courts may determine whether a case is 'exceptional' in the case-by-case exercise of their discretion, considering the totality of the circumstances." Id. In determining whether to award fees, district courts may consider a nonexclusive list of factors, including "'frivolousness, motivation, objective unreasonableness (both in the factual and legal components of the case) and the need in particular circumstances to advance considerations of compensation and deterrence.'" Id. at 1756 n.6. "[A] case presenting either subjective bad faith or exceptionally meritless claims may sufficiently set itself apart from mine-run cases to warrant a fee award." Id. at 1757. There is no precise rule or formula for determining whether to award attorney's fees, but instead equitable discretion should be exercised in light of the above considerations. Id. at 1756.

Entitlement to fees under § 285 must be shown by a preponderance of the evidence. See Octane Fitness, 134 S. Ct. at 1758. A district court's determination of whether to award

1 attorney's fees under 35 U.S.C. § 285 is reviewed for abuse of discretion. Highmark Inc.
2 v. Allcare Health Mgmt. Sys., 134 S. Ct. 1744, 1749 (2014) (“[T]he determination of
3 whether a case is ‘exceptional’ under § 285 is a matter of discretion.”).

4 After reviewing the totality of the circumstances including the record in this action
5 and the parties' arguments, the Court declines to find that the present case is “exceptional”
6 and declines to award Presidio attorney's fees. In the present action, Presidio accused
7 ATC's 550 capacitors of infringing the '356 patent, asserting a period of infringement
8 beginning in January 2010 when Presidio began selling the accused products. (Doc. No.
9 285-1, Thomas Expert Report at 14, 28-31.) Based on this asserted period of infringement,
10 Presidio initially sought over \$16 million in lost profit damages for the period of first
11 quarter of 2010 through September 13, 2015. (Id.) At the summary judgment stage, ATC
12 successfully obtained summary judgment in its favor on its affirmative defense of absolute
13 intervening rights based on Presidio's narrowing of the scope of the asserted claims during
14 ex parte reexamination proceedings that were instituted by ATC. (Doc. No. 234.) Because
15 of this substantive change to the scope the asserted claims, the Court held that Presidio is
16 only entitled to infringement damages in this case for the time period following the
17 issuance of the December 8, 2015 reexamination certificate. (Id. at 28.) Thus, although
18 Presidio ultimately prevailed at trial on the issues of infringement, willful infringement,
19 and validity of the '356 patent and was awarded over \$2 million in lost profits damages,
20 prior to the trial, ATC prevailed on its absolute intervening rights defense, thereby
21 substantially limiting the period of infringement at issue in the case and the damages
22 Presidio could seek. Thus, the present case was not a one-sided victory by Presidio.

23 Moreover, the Court notes that Presidio's invalidity defense at trial, although
24 ultimately rejected by the Court, was not meritless. The Court also notes that there was no
25 evidence of bad faith or litigation misconduct by ATC in this action. The present action
26 was a garden-variety hard-fought patent infringement action between two competitors.
27 Accordingly, the Court, exercising its sound discretion, declines to find the present case
28 “exceptional” and declines to award Presidio attorney's fees. The Court denies Presidio's

1 motion for attorney's fees.

2 **VI. Presidio's Motion for Supplemental Damages**

3 Presidio moves for an award of supplemental damages for any sales of accused
4 products occurring on and after February 21, 2016 – the date on which ATC last provided
5 sales information for the accused products. (Doc. No. 372-1 at 1-3.) Specifically, Presidio
6 requests (1) that the Court order ATC to account for all 550 capacitor sales made
7 subsequent to the latest sales data ATC provided and that was utilized at trial, and (2) that
8 the Court award it supplement damages on those as yet unaccounted for sales at the lost
9 profits rate adopted by the jury – \$1.58 per unit.²⁴ (*Id.* at 2.)

10 28 U.S.C. § 284 provides: “Upon finding for the claimant the court shall award the
11 claimant damages adequate to compensate for the infringement, but in no event less than a
12 reasonable royalty for the use made of the invention by the infringer, together with interest
13 and costs as fixed by the court. When the damages are not found by a jury, the court shall
14 assess them.” The Federal Circuit has explained that a patentee is not fully compensated
15 if the damages award does not include future lost sales. *Finjan, Inc. v. Secure Computing*
16 *Corp.*, 626 F.3d 1197, 1213 (Fed. Cir. 2010); *see also Fresenius USA, Inc. v. Baxter Int’l,*
17 *Inc.*, 582 F.3d 1288, 1303 (Fed. Cir. 2009) (“A damages award for pre-verdict sales of the
18 infringing product does not fully compensate the patentee because it fails to account for
19 post-verdict sales of repair parts.”). Therefore, a district court should award compensation
20 for any infringing sales not assessed by the jury. *See Finjan*, 626 F.3d at 1213; *Apple, Inc.*
21 *v. Samsung Elecs. Co.*, 67 F. Supp. 3d 1100, 1117-18 (N.D. Cal. 2014), *aff’d*, 816 F.3d
22 788 (Fed. Cir. 2016). In addition, “[c]ourts routinely grant motions for a further accounting
23 where the jury did not consider certain periods of infringing activity post-verdict.” *Metso*
24 *Minerals, Inc. v. Powerscreen Int’l Distribution Ltd.*, 833 F. Supp. 2d 333, 347 (E.D.N.Y.
25 2011); *accord Apple*, 67 F. Supp. 3d at 1118. “Courts have [also] applied this reasoning

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27 ²⁴ Presidio asserts that the jury awarded Presidio lost profits damages in the amount of \$2,166,654
28 based on ATC's sale of 1,371,300 units. (Doc. No. 372-1 at 2 (citing Doc. No. 328 at 4).) \$2,166,654
divided by 1,371,300 units equals \$1.58 per unit.

1 to the situation in which an infringer provides sales data that does not cover all sales made
2 prior to trial.” Sealant Sys. Int’l, Inc. v. TEK Glob. S.R.L., No. 5:11-CV-00774-PSG, 2014
3 WL 1008183, at *5 (N.D. Cal. Mar. 7, 2014). An award of supplemental damages should
4 be calculated consistent with the damages awarded in the jury’s verdict. ActiveVideo
5 Networks, Inc. v. Verizon Commc’ns, Inc., No. 2:10CV248, 2011 WL 4899922, at *2
6 (E.D. Va. Oct. 14, 2011); see, e.g., Sealant Sys., 2014 WL 1008183, at *5; Mondis Tech.
7 Ltd. v. Chimei InnoLux Corp., 822 F. Supp. 2d 639, 643 (E.D. Tex. 2011).

8 Presidio has presented the Court with evidence showing that ATC continues to offer
9 the accused products for sale even after the jury’s verdict. (Doc. No. 372-2, Ex. A.)
10 Further, ATC has represented to the Court that it does not intend to discontinue the accused
11 products until an injunction is entered. (Doc. No. 409-1 at 30.) Accordingly, Presidio is
12 entitled to an accounting of and supplemental damages on any sales of infringing products
13 not assessed by the jury. See Finjan, 626 F.3d at 1213; Apple, 67 F. Supp. 3d at 1117-18;
14 Sealant Sys., 2014 WL 1008183, at *5.

15 In response, ATC does not dispute Presidio’s contention that it is entitled to
16 supplemental damages for sales of accused products made on or after February 21, 2016 at
17 a rate of \$1.58 per unit. Rather, ATC only argues that Presidio’s motion is premature
18 because ATC’s motions for judgment as a matter of law are still pending. (Doc. No. 409-
19 24 at 11.) The Court rejects this argument. ATC fails to explain why the Court cannot
20 concurrently rule on both ATC’s post-trial motions and Presidio’s motion for supplemental
21 damages. Moreover, the Court has ruled on and denied ATC’s post-trial motions, and,
22 therefore, the motions are no longer pending. See supra. Accordingly, the Court grants
23 Presidio’s motion for supplemental damages. The Court orders ATC to account for all 550
24 capacitor sales made subsequent to the latest sales data it provided to Presidio and that was
25 utilized at trial and prior to the entry of the Court’s permanent injunction. Further, the
26 Court awards Presidio supplemental damages on those as yet unaccounted for sales at the
27 rate of \$1.58 per unit.

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VII. Presidio's Motion for Interest

A. Prejudgment Interest

Presidio moves for an award of prejudgment interest on its damages award. (Doc. No. 372-1 at 3-6.) Specifically, Presidio requests a prejudgment interest rate of 7 percent. (*Id.* at 4.) 28 U.S.C. § 284 provides: “the court shall award the claimant damages adequate to compensate for the infringement . . . together with interest and costs as fixed by the court.” The Supreme Court has interpreted section 284 to require that “prejudgment interest should ordinarily be awarded absent some justification for withholding such an award[.]” *Gen. Motors Corp. v. Devex Corp.*, 461 U.S. 648, 657 (1983); *see also* *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1574 (Fed. Cir. 1996) (“[P]rejudgment interest is the rule, not the exception.”). The purpose of prejudgment interest is to “compensate[] the patent owner for the use of its money between the date of injury and the date of judgment.” *Oiness v. Walgreen Co.*, 88 F.3d 1025, 1033 (Fed. Cir. 1996). “Generally, prejudgment interest should be awarded from the date of infringement to the date of judgment.” *Nickson Indus., Inc. v. Rol Mfg. Co.*, 847 F.2d 795, 800 (Fed. Cir. 1988).

In response, ATC argues that the Court should deny Presidio's request for prejudgment interest based on Presidio's undue delay in filing the present action. (Doc. No. 409-24 at 2-7.) The Court rejects ATC's contention. “District courts have discretion to limit prejudgment interest where, for example, the patent owner has caused undue delay in the lawsuit, but there must be justification bearing a relationship to the award.” *Nickson*, 847 F.2d at 800 (citations omitted); *see Gen. Motors Corp.*, 461 U.S. at 657 (“[I]t may be appropriate to limit prejudgment interest, or perhaps even deny it altogether, where the patent owner has been responsible for undue delay in prosecuting the lawsuit.”). But here there was no undue delay in filing the action. Presidio filed the present action on September 2, 2014. (Doc. No. 1.) In granting ATC's motion for summary judgment of its affirmative defense of absolute intervening rights, the Court held that Presidio is entitled to infringement damages only for the time period following the issuance of the December 8,

1 2015 reexamination certificate. (Doc. No. 234 at 28.) Thus, Presidio initiated the present
2 action prior to the entire period of infringement at issue in this case. Indeed, Presidio is
3 only seeking prejudgment interest from December 8, 2015 through June 17, 2016. (Doc.
4 No. 412 at 3.) Moreover, even if the Court were to consider the relevant period to have
5 begun in 2010 when ATC began selling the accused products, the Court finds that Presidio
6 acted reasonably in waiting for the prior litigation to be fully resolved prior to filing the
7 present lawsuit. See A.C. Aukerman, 960 F.2d at 1033 (listing “other litigation” as a
8 permissible excuse for a delay in filing suit).

9 ATC also argues that if the Court awards prejudgment interest, it should be at the
10 three-month U.S. Treasury Bill rate. The Court agrees with ATC on this point. “A trial
11 court is afforded wide latitude in the selection of interest rates” for prejudgment interest.
12 Uniroyal, Inc. v. Rudkin-Wiley Corp., 939 F.2d 1540, 1545 (Fed. Cir. 1991); accord Bio-
13 Rad Labs., Inc. v. Nicolet Instrument Corp., 807 F.2d 964, 969 (Fed. Cir. 1986). “Courts
14 may use the prime rate, the prime rate plus a percentage, the U.S. Treasury Bill rate, state
15 statutory rate, corporate bond rate, or whatever rate the court deems appropriate.” Apple,
16 67 F. Supp. 3d at 1121 (N.D. Cal. 2014); see also ActiveVideo Networks, Inc. v. Verizon
17 Commc’ns, Inc., No. 2:10-CV-248, 2011 WL 4899922, at *3 (E.D. Va. Oct. 14, 2011)
18 (“[W]hile courts have selected different rates, courts most often award either the prime rate
19 or the U.S. Treasury rate.”). In patent cases, courts typically only award prejudgment
20 interest at the prime rate or higher where there is evidence that the patent owner would
21 have been spared from borrowing money at the prime rate during the infringement period
22 had the infringer been paying royalties. See Finjan, Inc. v. Blue Coat Sys., Inc., No. 13-
23 CV-03999-BLF, 2016 WL 3880774, at *18 (N.D. Cal. July 18, 2016); Apple, 67 F. Supp.
24 3d at 1121-22; Mars, Inc. v. Coin Acceptors, Inc., 513 F. Supp. 2d 128, 133 (D. N.J. May
25 22, 2007). Here, Presidio has not put forth any evidence showing that it borrowed any
26 money during the infringement period at the prime rate or higher. Accordingly, the Court
27 concludes that the appropriate rate is the U.S. Treasury Bill rate. See, e.g., Laitram Corp.
28 v. NEC Corp., 115 F.3d 947, 955 (Fed. Cir. 1997) (finding no abuse of discretion where

1 “the district court, in exercises of its discretion, awarded prejudgment interest and set the
 2 rate at the U.S. Treasury bill rate, compounded annually”); see also Apple, 67 F. Supp. 3d
 3 at 1122 (“The Treasury Bill rate has been accepted and employed by many courts in patent
 4 cases as a reasonable method of placing a patent owner in a position equivalent to where it
 5 would have been had there been no infringement.”). Accordingly, the Court grants
 6 Presidio’s motion and awards Presidio prejudgment interest at the 3-month U.S. Treasury
 7 Bill rate, compounded monthly.²⁵

8 B. Postjudgment Interest

9 Presidio also moves for an award of postjudgment interest pursuant to 28 U.S.C. §
 10 1961. (Doc. No. 372-1 at 6-7.) An “award of postjudgment interest is governed by 28
 11 U.S.C. § 1961.” Tinsley v. Sea-Land Corp., 979 F.2d 1382, 1383 (9th Cir. 1992). Section
 12 1961 provides “[i]nterest shall be allowed on any money judgment in a civil case recovered
 13 in a district court” and “shall be calculated from the date of the entry of the judgment.”
 14 “Under the provisions of 28 U.S.C. § 1961, postjudgment interest on a district court
 15 judgment is mandatory.” Air Separation, Inc. v. Underwriters at Lloyd’s of London, 45
 16 F.3d 288, 290 (9th Cir. 1995).

17 ATC concedes that Presidio is entitled to postjudgment interest at the rate provided
 18 in 28 U.S.C. § 1961(a) from the date of the entry of judgment, June 17, 2016. (Doc. No.
 19 409-24 at 11.) Accordingly, the Court grants Presidio’s motion and awards Presidio
 20 postjudgment interest pursuant to 28 U.S.C. § 1961 at the statutory rate from the date of
 21 the entry of judgment, June 17, 2016.

22 ///

25 ²⁵ Whether the prejudgment interest “should be compounded or un compounded [is] left largely to
 26 the discretion of the district court.” Bio-Rad Labs., 807 F.2d at 969. “Courts ‘have recognized that
 27 compounding is necessary to fully compensate the patentee.’” Apple, 67 F. Supp. 3d at 1122; see also
 28 Finjan, 2016 WL 3880774, at *18 (“[M]ost [courts] apply some form of compounding.”). The Court,
 exercising its discretion, agrees with Presidio that the prejudgment interest should be compounded
 monthly. See, e.g., Stryker Corp. v. Zimmer Inc., No. 1:10-CV-1223, 2013 WL 6231533, at *30 (W.D.
 Mich. Aug. 7, 2013).

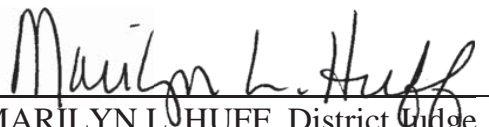
Conclusion

For the reasons above, the Court:

1. Denies ATC's Rule 50(b) motions for judgment as matter of law and Rule 59(e) motions for new trial;
2. Grants Presidio's motion for a permanent injunction;
3. Denies Presidio's motion for enhanced damages and attorney's fees; and
4. Grants Presidio's motion for an award of supplemental damages and interest.

IT IS SO ORDERED.

DATED: August 17, 2016


MARILYN L. HUFF, District Judge
UNITED STATES DISTRICT COURT

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8 **UNITED STATES DISTRICT COURT**
9 **SOUTHERN DISTRICT OF CALIFORNIA**
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11 PRESIDIO COMPONENTS, INC.,
12 Plaintiff,
13 vs.
14 AMERICAN TECHNICAL
15 CERAMICS CORP.,
16 Defendant.

CASE NO. 14-CV-2061-H (BGS)

**ORDER DENYING
DEFENDANT'S MOTION TO
EXCLUDE EXPERT
TESTIMONY**

[Doc. No. 153.]

17 On November 30, 2015, Defendant American Technical Ceramics Corp. filed a
18 Daubert¹ motion to exclude the opinions and testimony of Plaintiff Presidio
19 Components, Inc.'s proposed technical expert, Dr. Wayne Huebner. (Doc. No. 153.)
20 On December 28, 2015, Presidio filed an opposition to the motion. (Doc. No. 201.)
21 On January 4, 2016, ATC filed a reply. (Doc. No. 184.) The Court held a hearing on
22 the matter on January 11, 2016. Brett A. Schatz and Gregory F. Ahrens appeared for
23 Presidio. Marvin S. Gittes and Peter F. Snell appeared for ATC. For the reasons
24 below, the Court denies ATC's Daubert motion.

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28 ¹ Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 597 (1993).

Background

On September 2, 2014, Plaintiff Presidio Components, Inc. filed a complaint for patent infringement against Defendant American Technical Ceramics Corp., alleging infringement of U.S. Patent No. 6,816,356 (“the ’356 patent”). (Doc. No. 1, Compl.) The U.S. Patent and Trademark Office issued a reexamination certificate for the ’356 patent on December 8, 2015.² (Doc. No. 170-2, FAC Ex. 2.) On December 22, 2015, Presidio filed a first amended complaint, alleging infringement of the ’356 patent as amended by the reexamination certificate. (Doc. No. 170, FAC ¶ 53.) Specifically, Presidio alleges that ATC’s 550 line of capacitors infringes claims 1, 3, 5, 16, 18, and 19 of the ’356 patent. (*Id.* ¶ 26.) On December 22, 2015, ATC filed a second amended answer and counterclaims to the first amended complaint. (Doc. No. 171.) By the present motion, ATC moves to exclude the expert report and testimony of Presidio’s proposed technical expert, Dr. Wayne Huebner. (Doc. No. 153-1.)

Discussion

I. ATC’s Daubert Motion to Exclude Expert Testimony

A district court’s decision to admit expert testimony under Daubert in a patent case is governed by the law of the regional circuit. Summit 6, LLC v. Samsung Elecs. Co., 802 F.3d 1283, 1294 (Fed. Cir. 2015). When considering expert testimony offered pursuant to Rule 702, the trial court acts as a “gatekeeper” by “making a preliminary determination of whether the expert’s testimony is reliable.” Elsayed Mukhtar v. Cal. State Univ., Hayward, 299 F.3d 1053, 1063 (9th Cir. 2002); *see* Kumho Tire Co. v. Carmichael, 526 U.S. 137, 150 (1999); Daubert, 509 U.S. at 597. Under Rule 702 of the Federal Rules of Evidence, a court may permit opinion testimony from an expert only if “(a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable

² The PTO had also previously issued a reexamination certificate for the ’356 patent on September 13, 2011. (Doc. No. 170-1, FAC Ex. 1.)

1 principles and methods; and (d) the expert has reliably applied the principles and
2 methods to the facts of the case.”

3 The test for reliability of expert testimony is flexible and depends on the
4 particular circumstances of the case. Alaska Rent-A-Car, Inc. v. Avis Budget Grp.,
5 Inc., 738 F.3d 960, 969 (9th Cir. 2013). “To aid courts in exercising [their]
6 gatekeeping role, the Supreme Court has suggested a non-exclusive and flexible list of
7 factors that a court may consider when determining the reliability of expert testimony,
8 including: (1) whether a theory or technique can be tested; (2) whether it has been
9 subjected to peer review and publication; (3) the known or potential error rate of the
10 theory or technique; and (4) whether the theory or technique enjoys general acceptance
11 within the relevant scientific community.” Messick v. Novartis Pharm. Corp., 747 F.3d
12 1193, 1197 (9th Cir. 2014); Estate of Barabin v. AstenJohnson, Inc., 740 F.3d 457, 463
13 (9th Cir. 2014) (en banc). The Ninth Circuit has stressed that this list of factors is
14 meant to be helpful, not definitive. Alaska Rent-A-Car, 738 F.3d at 969.

15 “Under Daubert, the district judge is ‘a gatekeeper, not a fact finder.’ When an
16 expert meets the threshold established by Rule 702 as explained in Daubert, the expert
17 may testify and the jury decides how much weight to give that testimony.” Primiano
18 v. Cook, 598 F.3d 558, 564-65 (9th Cir. 2010). “[T]he test under Daubert is not the
19 correctness of the expert’s conclusions but the soundness of his methodology.”
20 Primiano, 598 F.3d at 564. “Shaky but admissible evidence is to be attacked by cross
21 examination, contrary evidence, and attention to the burden of proof, not exclusion.”
22 Id. (citing Daubert, 509 U.S. at 594, 596); accord Summit 6, 802 F.3d at 1296.
23 “Basically, the judge is supposed to screen the jury from unreliable nonsense opinions,
24 but not exclude opinions merely because they are impeachable.” Alaska Rent-A-Car,
25 738 F.3d at 969. Further, the Ninth Circuit has explained that “Rule 702 should be
26 applied with a ‘liberal thrust’ favoring admission.” Messick, 747 F.3d at 1196.

27 Whether to admit or exclude expert testimony lies within the trial court’s
28 discretion. Gen. Elec. Co. v. Joiner, 522 U.S. 136, 141-42 (1997); United States v.

1 Verduzco, 373 F.3d 1022, 1032 (9th Cir. 2004) (“We . . . have stressed that the ‘trial
2 court has broad discretion to admit or exclude expert testimony’.”). The Ninth Circuit
3 has explained that “[a] trial court not only has broad latitude in determining whether
4 an expert’s testimony is reliable, but also in deciding how to determine the testimony’s
5 reliability.” Ellis v. Costco Wholesale Corp., 657 F.3d 970, 982 (9th Cir. 2011).

6 After considering the briefs, the law, the arguments of counsel and the relevant
7 expert reports and depositions, the Court denies ATC’s motion to exclude the
8 testimony of Dr. Huebner. Dr. Huebner’s opinions are relevant to the issues of
9 infringement and validity of the ’356 patent in the present case. In its motion, ATC
10 criticizes the testing methodologies used by Dr. Huebner in reaching these opinions.
11 (Doc. No. 153-1 at 8-22.) But, ATC’s own expert agrees that the basic methodologies
12 used by Dr. Huebner, insertion loss testing, are well known to one skilled in the art.
13 (See Doc. No. 178-1, Ex. A at 36-37; see also Doc No. 153-1 (ATC describing
14 insertion loss testing as “a conventional test”).) ATC may disagree with the
15 conclusions that Dr. Huebner reaches in employing those methodologies, but that is not
16 a proper basis for the exclusion of expert testimony. See Primiano, 598 F.3d at 564
17 (“[T]he test under Daubert is not the correctness of the expert’s conclusions . . .”).
18 ATC also challenges Dr. Huebner’s opinions because he relied in part on other experts,
19 such as Mr. Devoe, in performing the relevant tests. (Doc. No. 153-1 at 13-14; Doc.
20 No. 184 at 9.) But, “[e]xperts routinely rely upon other experts hired by the party they
21 represent for expertise outside of their field. Rule 703 explicitly allows an expert to
22 rely on information he has been made aware of ‘if experts in the particular field would
23 reasonably rely on those kinds of facts or data in forming an opinion on the subject.’”
24 Apple Inc. v. Motorola, Inc., 757 F.3d 1286, 1321 (Fed. Cir. 2014) (quoting Fed. R.
25 Evid. 703) (citations omitted), overruled on other grounds by Williamson v. Citrix
26 Online, LLC, 792 F.3d 1339, 1349 (Fed. Cir. 2015) (en banc). In sum, the Court
27 concludes that ATC’s challenges go to the weight of Dr. Huebner’s opinions and
28 testimony, not their admissibility. Therefore, the Court concludes that Dr. Huebner’s

1 opinions and testimony satisfy the Daubert standard and ATC's challenges to those
2 opinions are better left for cross examination. See Alaska Rent-A-Car, 738 F.3d at 970
3 (affirming the denial of a Daubert motion where the movant's challenges went to "the
4 weight of the testimony and its credibility, not its admissibility").

5 ATC also argues that if the Court does not exclude Dr. Huebner's testimony in
6 full, the Court should exclude Dr. Huebner's testimony as to the 550Z, 550U, and 550L
7 capacitors because he did not test those specific products. (Doc. No. 153-1 at 23-24.)
8 In response, Presidio argues that Dr. Huebner's infringement analysis properly applies
9 to all four models of the 550 line of capacitors based on his evaluation of the behavior
10 of the entire 550 family of devices. (Doc. No. 177 at 25.) Use of a representative
11 product can, "in appropriate cases and given appropriate support", be used to prove
12 infringement of other accused products. Bluestone Innovations LLC v. Nichia Corp.,
13 No. C 12-00059 SI, 2013 WL 8540910, at *1 (N.D. Cal. Sept. 25, 2013); see also
14 Vigilos LLC v. Sling Media Inc., No. C-11-04117 SBA (EDL), 2012 WL 9973147, at
15 *4 (N.D. Cal. July 12, 2012) ("Representative examples may be a useful tool for
16 proving an infringement case at trial."). In this case, the parties dispute whether the
17 550S capacitor is representative of the other accused capacitors for purposes of
18 determining infringement of the '356 patent. (MSJ Order at 16-17; compare Doc. No.
19 149-1 at 1-3 with Doc. No. 200 at 6.) But, that dispute does not lead to the exclusion
20 of Dr. Huebner's expert testimony. See TiVo, Inc. v. EchoStar Commc'ns Corp., 516
21 F.3d 1290, 1308 (Fed. Cir. 2008) ("[T]here is nothing improper about an expert
22 testifying in detail about a particular device and then stating that the same analysis
23 applies to other allegedly infringing devices that operate similarly."). Accordingly, the
24 Court declines to exclude Dr. Huebner's testimony as to the 550Z, 550U, and 550L
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1 capacitors.³

2 **II. ACT's Request for a Court Appointed Expert**

3 ATC requests that the Court consider appointing a special master under Federal
4 Rule of Evidence 706 to issue a report and recommendation on its Daubert motion.
5 (Doc. No. 153-1 at 24-25.) Presidio opposes ATC's request, arguing that ATC's
6 request is unsupported and will result in a substantial delay in the case. (Doc. No. 201
7 at 25.)

8 The appointment of an independent expert in a patent case is governed by the
9 law of the regional circuit. See Monolithic Power Sys., Inc. v. O2 Micro Int'l Ltd., 558
10 F.3d 1341, 1346 (Fed. Cir. 2009). Federal Rule of Evidence 706 provides: "On a
11 party's motion or on its own, the court may order the parties to show cause why expert
12 witnesses should not be appointed and may ask the parties to submit nominations."
13 "Under Rule 706(a) of the Federal Rules of Evidence, the district court has discretion
14 to appoint an expert on its own motion or on the motion of a party." Faletogo v. Moya,
15 No. 12CV631 GPC WMC, 2013 WL 524037, at *1 (S.D. Cal. Feb. 12, 2013) (citing
16 Walker v. Am. Home Shield Long Term Disability Plan, 180 F.3d 1065, 1071 (9th Cir.
17 1999)). "In determining whether to appoint a neutral expert witness, a district court
18 considers the '[c]omplexity of the evidence, and the court's need for an impartial
19 viewpoint.'" Womack v. GEO Grp., Inc., No. CV-12-1524-PHX-SRB, 2013 WL
20 2422691, at *2 (D. Ariz. June 3, 2013). "District courts do not commonly appoint an
21 expert pursuant to Rule 706 and usually do so only in exceptional cases." Id. (internal
22 quotation marks and brackets omitted); see Monolithic Power, 558 F.3d at 1346
23 ("district courts rarely make Rule 706 appointments").

24 Exercising its sound discretion, the Court declines to appoint an expert pursuant
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26 ³ Further, the Court has granted Presidio's request for the limited reopening of expert
27 discovery to allow Dr. Huebner to test the 550Z, 550U, and 550L capacitors, (Doc. No. 207),
28 which will likely render this issue moot.

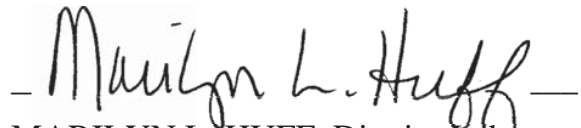
1 to Rule 706 at this late stage of the proceedings. ATC has failed to show that the
2 present issue is an exceptional one warranting the appointment of a court-appointed
3 expert. Moreover, the Court concludes that the issues and arguments contained in
4 ATC's Daubert motion are not so complex that they require the testimony of an
5 independent expert to assist the Court in adjudicating the motion. Accordingly, the
6 Court denies ATC's request for a court-appointed expert.

7 **Conclusion**

8 For the reasons above, the Court denies Defendant's motion to exclude Dr.
9 Huebner without prejudice to any contemporaneous objections at trial made outside the
10 presence of the jury.

11 **IT IS SO ORDERED.**

12 DATED: January 12, 2016

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14 MARILYN L. HUFF, District Judge
15 UNITED STATES DISTRICT COURT
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8 **UNITED STATES DISTRICT COURT**
9 **SOUTHERN DISTRICT OF CALIFORNIA**
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11 PRESIDIO COMPONENTS, INC.,
12 Plaintiff,

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14 vs.

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17 AMERICAN TECHNICAL
18 CERAMICS CORP.,
19 Defendant.
20

CASE NO. 14-CV-2061-H (BGS)

ORDER:

**(1) GRANTING IN PART AND
DENYING IN PART
PLAINTIFF'S MOTIONS IN
LIMINE; AND**

[Doc. No. 242.]

**(2) GRANTING IN PART AND
DENYING IN PART
DEFENDANT'S MOTIONS IN
LIMINE**

[Doc. No. 246.]

21 On February 26, 2016, the parties each filed five motions in limine to exclude
22 certain evidence. (Doc. Nos. 242, 246.) On March 11, 2016, the parties filed their
23 oppositions. (Doc. Nos. 272, 273.) On March 18, 2016, the parties filed their replies.
24 (Doc. Nos. 266, 267.) The Court held a hearing on the matter on March 25, 2016. Brett
25 A. Schatz and Gregory F. Ahrens appeared for Presidio. Ronald E. Cahill, Peter F.
26 Snell, and Heather Repicky appeared for ATC. For the reasons below, the Court grants
27 in part and denies in part Presidio's motions in limine, and the Court grants in part and
28 denies in part ATC's motions in limine.

Background

On September 2, 2014, Plaintiff Presidio Components, Inc. filed a complaint for patent infringement against Defendant American Technical Ceramics Corp., alleging infringement of U.S. Patent No. 6,816,356 (“the ’356 patent”). (Doc. No. 1, Compl.) On December 8, 2015, the United States Patent and Trademark Office issued a reexamination certificate for the ’356 patent, amending certain claims of the patent.¹ (Doc. No. 170-2, FAC Ex. 2.) Amended claim 1 of the ’356 patent, the only independent claim asserted by Presidio in this action, is as follows:

1. A capacitor comprising:

a substantially monolithic dielectric body;

a conductive first plate disposed within the dielectric body;

a conductive second plate disposed within the dielectric body and forming a capacitor with the first plate;

a conductive first contact disposed externally on the dielectric body and electrically connected to the first plate; and

a conductive second contact disposed externally on the dielectric body and electrically connected to the second plate, and the second contact being located sufficiently close to the first contact in an edge to edge relationship in such proximity as to form a first fringe-effect capacitance with the first contact that is capable of being determined by measurement in terms of a standard unit.

U.S. Patent No. 6,816,356 C2, at 1:23-36 (Reexamination Certificate filed Dec. 8, 2015) (emphasis removed from original).

On December 22, 2015, Presidio filed a first amended complaint, alleging infringement of the ’356 patent as amended by the reexamination certificate. (Doc. No. 170, FAC.) Specifically, Presidio alleges that ATC’s 550 line of capacitors infringes claims 1, 3, 5, 16, 18, and 19 of the ’356 patent. (*Id.* ¶ 26.) On December 22, 2015, ATC filed a second amended answer and counterclaims to the first amended complaint. (Doc. No. 171.) On February 10, 2016, the Court granted ATC’s motion for summary

¹ The PTO previously issued a reexamination certificate for the ’356 patent on September 13, 2011. (Doc. No. 170-1, FAC Ex. 1.) This reexamination certificate did not alter any of the claims at issue in the present action. (*Id.*)

1 judgment of its affirmative defense of absolute intervening rights and held that Presidio
2 is entitled to infringement damages only for the time period following the issuance of
3 the reexamination certificate on December 8, 2015. (Doc. No. 234.)

4 Discussion

5 **I. Presidio's Motion in Limine No. 1**

6 In its first motion in limine, Presidio moves to exclude all testimony, evidence,
7 and argument related to any contention by ATC that the '356 patent is invalid, including
8 all testimony, evidence, and argument related to ATC's affirmative defense that the
9 '356 patent is invalid due to indefiniteness. (Doc. No. 242-1 at 4-8.) Presidio argues
10 that invalidity due to lack of patentable subject matter under 35 U.S.C. § 101, lack of
11 novelty under 35 U.S.C. § 102, or obviousness under 35 U.S.C. § 103 is not at issue in
12 the present case. (Id. at 4.) Presidio further argues that although invalidity due to
13 indefiniteness is at issue in this case, indefiniteness is a question of law for the Court
14 to decide, and, therefore is not relevant to the factual issues to be decided by the jury.
15 (Id. at 4-5.) In response, ATC argues that Presidio's motion should be denied because
16 it is common for courts to permit the jury to hear evidence on issues to be decided by
17 the court in order to have a unified trial. (Doc. No. 273 at 2, 6.) ATC further argues
18 that there should be a unified trial on the issues of indefiniteness and infringement
19 because its indefiniteness defense is inextricably intertwined with its non-infringement
20 defense. (Id. at 4-6.)

21 The Court agrees that indefiniteness is a question of law involving underlying
22 factual determination to be decided by the Court. See Teva Pharm. USA, Inc. v.
23 Sandoz, Inc., 789 F.3d 1335, 1341 (Fed. Cir. 2015). But, Presidio's motion is premised
24 on the notion that the Court will hold a bifurcated trial where there will be a jury trial
25 on the issue of infringement and other questions of fact and then a separate bench trial
26 on the issue of indefiniteness. Exercising its sound discretion and for the reasons
27 discussed at the hearing, the Court declines to bifurcate the trial on the issue of
28 indefiniteness. The Court agrees with ATC that much of its indefiniteness defense is

1 inextricably intertwined with its non-infringement defense, and, therefore, in the interest
2 of judicial economy, the Court will hold one trial on the issues of both infringement and
3 invalidity.² See Hangarter v. Provident Life & Acc. Ins. Co., 373 F.3d 998, 1021 (9th
4 Cir. 2004) (affirming district court's refusal to bifurcate trial where there was a
5 substantial overlap in evidence between the claims at issue); see also Zivkovic v. S.
6 California Edison Co., 302 F.3d 1080, 1088 (9th Cir. 2002) ("Rule 42(b) of the Federal
7 Rules of Civil Procedure confers broad discretion upon the district court to bifurcate a
8 trial."). Accordingly, the Court denies Presidio's first motion in limine without
9 prejudice to any contemporaneous objections at trial made outside the presence of the
10 jury.

11 **II. Presidio's Motion in Limine No. 2**

12 In its second motion in limine, Presidio moves to exclude all testimony, evidence
13 and argument related to ATC's affirmative defense of intervening rights. (Doc. No.
14 242-1 at 8-12.) Presidio argues that ATC's affirmative defense of absolute intervening
15 rights has already been ruled on by the Court, and ATC's defense of equitable
16 intervening rights is an equitable issue to be decided by the Court. (Id. at 8-9) Presidio
17 argues, therefore, that ATC's intervening rights affirmative defense is not relevant to
18 any of the factual issues to be decided by the jury. (Id.) In response, ATC argues that
19 Presidio's motion should be denied because evidence related to its defense of equitable
20 intervening rights is also relevant to the jury issues of damages and willfulness. (Doc.
21 No. 273 at 7-10.) ATC further argues that in light of this overlap of evidence, the issue
22 of equitable intervening rights should be presented in a single trial along with the
23 factual issues to be decided by the jury. (Id.)

24
25 ² In addition, exercising its discretion, the Court concludes that it is appropriate in this
26 case to present the issue of invalidity due to indefiniteness to an advisory jury. See Fed. R.
27 Civ. P. 39(c) ("In an action not triable of right by a jury, the court, on motion or on its own:
28 (1) may try any issue with an advisory jury"); DePuy Spine, Inc. v. Medtronic Sofamor
Danek, Inc., 567 F.3d 1314, 1324 (Fed. Cir. 2009) ("If a district court believes that an
advisory verdict would be helpful, . . . then one may be obtained under Federal Rule of Civil
Procedure 39(c).").

1 The Court has already ruled on ATC's affirmative defense of absolute
2 intervening rights, and, therefore, that issue has been resolved. (See Doc. No. 234.)
3 ATC's affirmative defense of equitable intervening rights remains, but it is an equitable
4 issue to be decided by the Court. See 35 U.S.C. § 252; Revolution Eyewear, Inc. v.
5 Aspex Eyewear, Inc., 563 F.3d 1358, 1373 (Fed. Cir. 2009). Further, exercising its
6 sound discretion, the Court concludes that it is appropriate under the present
7 circumstances, to bifurcate the trial with respect to the issue of equitable intervening
8 rights, and have that issue decided by the Court, if necessary, after the jury trial on the
9 other issues in this case has been completed. See Fed. R. Civ. P. 42(b); Zivkovic, 302
10 F.3d at 1088 ("Rule 42(b) of the Federal Rules of Civil Procedure confers broad
11 discretion upon the district court to bifurcate a trial.").

12 In light of the Court's decision to bifurcate the trial as to the issue of equitable
13 intervening rights, the Court grants Presidio's second motion in limine. See Fed. R.
14 Evid. 402, 403. The Court excludes all testimony, evidence and argument related to
15 ATC's affirmative defense of absolute and equitable intervening rights, absent a further
16 showing from ATC as to relevance.

17 **III. Presidio's Motion in Limine No. 3**

18 In its third motion in limine, Presidio moves to exclude all testimony, evidence
19 and argument related to ATC's affirmative defenses of laches, equitable estoppel, and
20 waiver. (Doc. No. 242-1 at 12-15.) Presidio argues that these equitable affirmative
21 defenses are to be decided by the Court, and, therefore, are not relevant to any of the
22 factual issues to be decided by the jury. (Id.) In response, ATC argues that Presidio's
23 motion should be denied because the evidence underlying these affirmative defenses
24 is also relevant to issues to be decided by the jury. (Doc. No. 273 at 10-12.) ATC
25 further argues that theses affirmative defenses should be presented in a single trial along
26 with the issues of fact to be decided by the jury. (Id.)

27 ATC's affirmative defenses of laches, equitable estoppel, and waiver are all
28

1 equitable issues to be decided by the Court. See A.C. Aukerman Co. v. R.L. Chaides
2 Const. Co., 960 F.2d 1020, 1028 (Fed. Cir. 1992) (en banc); Qualcomm Inc. v.
3 Broadcom Corp., 548 F.3d 1004, 1019 (Fed. Cir. 2008). Further, exercising its sound
4 discretion, the Court concludes that it is appropriate under the present circumstances,
5 to bifurcate the trial with respect to these equitable issues, and have these equitable
6 issues decided by the Court, if necessary, after the jury trial on the other issues in this
7 case has been completed. See Fed. R. Civ. P. 42(b); Zivkovic, 302 F.3d at 1088 (“Rule
8 42(b) of the Federal Rules of Civil Procedure confers broad discretion upon the district
9 court to bifurcate a trial.”).

10 In light of the Court’s decision to bifurcate the trial as to the issue of laches,
11 equitable estoppel, and waiver, the Court grants Presidio’s second motion in limine.
12 See Fed. R. Evid. 402, 403. The Court excludes all testimony, evidence and argument
13 related to ATC’s affirmative defenses of laches, equitable estoppel, and waiver, absent
14 a further showing from ATC as to relevance.

15 **IV. Presidio’s Motion in Limine No. 4**

16 In its fourth motion in limine, Presidio moves to exclude all testimony, evidence,
17 and argument related to prior settlement negotiations between the parties. (Doc. No.
18 242-1 at 15-19.) Presidio argues that evidence of conduct or statements made in
19 settlement negotiations is inadmissible under Federal Rule of Evidence 408. (Id. at 16.)
20 Presidio further argues that even if such evidence is admissible it should be excluded
21 under Federal Rule of Evidence 403 because such evidence is prejudicial to Presidio
22 and would confuse or mislead the jury. (Id. at 18.) In response, ATC argues that the
23 evidence related to the parties’ prior settlement negotiations is admissible and relevant
24 to the issues of willfulness, induced infringement, and damages. (Doc. No. 273 at 13-
25 15.)

26 The evidence of the parties’ prior settlement negotiation primarily relates to
27 ATC’s equitable defenses which will be tried to the Court, if necessary, in a separate
28

1 trial. Moreover, to the extent any of the parties' prior settlement negotiations are
2 relevant to any of the issues to be tried before the jury, the Court concludes that the
3 probative value of such evidence is substantially outweighed by the danger of unfair
4 prejudice to Presidio and the risk of confusing or misleading the jury. Accordingly, the
5 Court grants Presidio's fourth motion in limine. See Fed. R. Evid. 403, 408. The Court
6 excludes all testimony and evidence related to prior settlement negotiations between the
7 parties, absent a further showing from ATC.

8 **V. Presidio's Motion in Limine No. 5**

9 In its fifth motion in limine, Presidio moves to exclude all testimony, evidence,
10 and argument by ATC that U.S. Patent No. 8,446,705 ("the '705 patent") covers the
11 accused products and provides a defense to infringement or liability. (Doc. No. 242-1
12 at 19-21.) Presidio argues that whether ATC owns a patent that allegedly covers the
13 accused products is not relevant to any of the issues in the case, for example whether
14 the accused products infringe the '356 patent. (Id.) ATC argues that it is entitled to
15 refer to the '705 patent to rebut the opinions of Presidio's infringement expert, who
16 extensively cites to and relies on the '705 patent in his expert report. (Doc. No. 273 at
17 17-22.) In its reply, Presidio clarifies that it is not moving to exclude any reference to
18 the '705 patent by ATC. (Doc. No. 266 at 9-10.) Rather, it is only moving to exclude
19 evidence that the '705 patent covers the accused products as a defense to Presidio's
20 claims of infringement. (Id.)

21 The Court agrees with ATC that Presidio opened the door for reference to and
22 analysis of the '705 patent by having its infringement expert rely on that patent as part
23 of his infringement analysis. Therefore, ATC may reference and introduce evidence
24 related to the '705 patent at trial. Further, to the extent that Presidio contends that
25 ATC's rebuttal analysis of the '705 patent might go too far, the Court concludes that
26 this issue would more appropriately be addressed through a contemporaneous objection
27
28

1 at trial.³ Accordingly, the Court denies Presidio's fifth motion in limine without
2 prejudice to any contemporaneous objections at trial made outside the presence of the
3 jury.

4 **VI. ATC's Motion in Limine No. 1**

5 In its first motion in limine, ATC moves to exclude portions of Dr. Huebner's
6 supplemental expert report and the opinions contained therein. (Doc. No. 251 at 1-5.)
7 Specifically, ATC argues that Dr. Huebner's supplemental expert report contains
8 material that is beyond the scope of what was permitted under the Court's Amended
9 Scheduling Order. (*Id.*) In response, Presidio argues that the content of Dr. Huebner's
10 supplemental expert report was in compliance with the Court's Amended Scheduling
11 Order. (Doc. No. 272 at 1-6.)

12 The Court agrees with Presidio that Dr. Huebner's supplemental expert report
13 complied with the Court's Amended Scheduling Order. Further, even assuming some
14 of the opinions contained in the supplemental expert report were technically outside the
15 scope of the Amended Scheduling Order, ATC suffered no prejudice from such
16 opinions. ATC was permitted to serve its own supplemental rebuttal expert report and
17 to depose Dr. Huebner regarding his supplemental expert report. (Doc. No. 207 at 3.)
18 Accordingly, the Court declines to exclude the opinions contained in Dr. Huebner's
19 supplemental expert report.

20 ATC also argues that the Court should exclude Dr. Huebner's opinions regarding
21 his simulation testing of the accused products. (Doc. No. 251 at 3-4.) ATC argues that
22 Dr. Hueber's simulation testing is now irrelevant in light of the Court's holding that a
23 fringe-effect capacitance that is merely derivable or calculatable by using theoretical
24 calculations or simulations is outside the scope of the amended claims. (*Id.* at 4 (citing
25 Doc. No. 234 at 20).) In response, Presidio argues that Dr. Huebner's simulation testing

26
27 ³ In addition, the Court notes that in order to help remedy this issue, Presidio can also
28 submit a proposed jury instruction on the relevant law.

1 remains relevant. Presidio argues that although it does not directly prove that the
2 relevant limitation is satisfied by the accused products, Dr. Huebner's simulation testing
3 acts as a building block for his ultimate conclusion that the accused products satisfy the
4 limitations of the asserted claims. (Doc. No. 272 at 6-7.) The Court concludes that
5 ATC's challenges to Dr. Huebner's opinions at issue go to the weight of his testimony,
6 rather than its admissibility. Accordingly, the Court declines to exclude Dr. Huebner's
7 opinions regarding his simulation testing. See Alaska Rent-A-Car, Inc. v. Avis Budget
8 Grp., Inc., 738 F.3d 960, 970 (9th Cir. 2013) (affirming the denial of a motion to
9 exclude where the movant's challenges went to "the weight of the testimony and its
10 credibility, not its admissibility").

11 ATC also argues that Dr. Huebner's opinions regarding his insertion loss testing
12 should be excluded. (Doc. No. 251 at 4-5.) In so doing, ATC essentially raises the
13 same arguments that it previously did in its Daubert motion, which the Court denied.
14 (Doc. No. 209.) The Court again concludes that ATC's challenges to Dr. Huebner's
15 opinions go to the weight of his testimony, rather than its admissibility. Accordingly,
16 the Court declines to exclude Dr. Huebner's opinions related to his insertion loss
17 testing. See Alaska Rent-A-Car, 738 F.3d at 970. In sum, the Court denies ATC's first
18 motion in limine without prejudice to any contemporaneous objections at trial made
19 outside the presence of the jury.

20 **VII. ATC's Motion in Limine No. 2**

21 In its second motion in limine, ATC moves (1) to preclude Presidio's damages
22 expert, Mr. Thomas, from testifying that the 560 capacitor is not an available
23 non-infringing alternative and (2) to exclude his supplemental expert report. (Doc. No.
24 251 at 5-11.) Turning to the first part of ATC's motion, ATC argues that Mr. Thomas
25 should be precluded from opining that the 560 capacitor is not an available
26 non-infringing alternative because his opinion is based on the fact that the 560 capacitor
27 was not widely available during the damages period and was sold to only one customer.
28

1 (Id. at 5-6.) ATC argues that Mr. Thomas’s position is legally erroneous. (Id. at 5.)
2 In response, Presidio argues that ATC’s contentions go to weight rather than the
3 admissibility of Mr. Thomas’s opinions. (Doc. No. 272 at 9-11.) The Court agrees with
4 Presidio. See Alaska Rent-A-Car, 738 F.3d at 970 (affirming the denial of a motion to
5 exclude where the movant’s challenges went to “the weight of the testimony and its
6 credibility, not its admissibility”). Further, the opinions from Mr. Thomas at issue are
7 relevant to Presidio’s assertion of lost profit damages, specifically Panduit⁴ factor two:
8 “absence of acceptable noninfringing substitutes.” See Siemens Med. Sols. USA, Inc.
9 v. Saint-Gobain Ceramics & Plastics, Inc., 637 F.3d 1269, 1288 (Fed. Cir. 2011) (“To
10 be ‘available,’ an acceptable noninfringing substitute must have been ‘available or on
11 the market’ at the time of infringement.”). Accordingly, the Court denies ATC’s
12 motion to preclude Mr. Thomas from testifying that the 560 capacitor is not an available
13 non-infringing alternative without prejudice to any contemporaneous objections at trial
14 made outside the presence of the jury.

15 Turning to ATC’s request to strike Mr. Thomas’s supplemental expert report, the
16 Court declines to strike the expert report. Even assuming the supplemental expert
17 report was served in violation of the Court’s scheduling order, ATC was not prejudiced
18 by the supplemental expert report as Presidio allowed ATC to serve its own
19 supplemental rebuttal expert report from its damages expert, Dr. Woods. (Doc. Nos.
20 261-1, 261-1, Exs. A-B.) See Genentech, Inc. v. Insmed Incorporation, No. C-04-5429
21 CW (EMC), 2006 WL 5267971, at *1 (N.D. Cal. Oct. 11, 2006) (denying motion to
22 strike an expert report and noting that there was no prejudice to the moving party as that
23 party was allowed to serve a rebuttal expert report). Moreover, ATC’s motion to strike
24 is untimely as the supplemental expert report at issue was served on November 6, 2015,
25 (Doc. No. 251-2, Ex. 7), well before the Court’s deadlines for the filing of pre-trial
26

27 ⁴ Panduit Corp. v. Stahlin Bros. Fibre Works, Inc., 575 F.2d 1152 (6th Cir. 1978).
28

1 motions and Daubert motions. (Doc. No. 61 at 11.) Yet, ATC did not move to strike
2 the expert report until it filed the present motion in limine on February 26, 2016.
3 Accordingly, the Court denies ATC's motion to strike Mr. Thomas's supplemental
4 expert report.

5 **VIII. ATC's Motion in Limine No. 3**

6 In its third motion in limine, ATC originally moved to exclude all evidence and
7 argument related to the 08-cv-335 litigation, the reexamination proceedings, and ATC's
8 corporate parents. (Doc. No. 251 at 11-17.) Presidio opposed the motion. (Doc. No.
9 272 at 14-20.) In its reply, ATC narrowed its third motion in limine, so that ATC is
10 now only moving to preclude references to: "Kyocera, which is a majority owner of
11 ATC's parent corporation, AVX; and Litigations involving ATC, AVX, or Kyocera that
12 do not involve Presidio." (Doc. No. 267 at 7.)

13 At the hearing, Presidio clarified that it does not oppose the present motion in
14 limine as narrowed by ATC's reply brief. Accordingly, the Court grants ATC's third
15 motion in limine. See Fed. R. Evid. 402, 403. The Court excludes any evidence or
16 argument related to Kyocera or unrelated litigation involving ATC, AVX, or Kyocera
17 that does not involve Presidio, absent a further showing from Presidio as to relevance.

18 **IX. ATC's Motion in Limine No. 4**

19 In its fourth motion in limine, ATC moves to exclude all evidence and argument
20 related to (1) Presidio's requests for a permanent injunction, an award of treble
21 damages, and an award of attorneys' fees, or (2) the "presumption of validity" standard
22 afforded to the '356 Patent. (Doc. No. 251 at 18-21.) In response, Presidio argues that
23 the first part of this motion in limine is moot because it agrees not to reference its
24 requests for an injunction, treble damages, or attorneys' fees in front of the jury.⁵ (Doc.

25
26 ⁵ Although it agrees not to reference the above matters in front of the jury, Presidio
27 clarifies that it should not be precluded at trial from introducing evidence related to the
28 underlying issues that relate to damages. (Doc. No. 272 at 20.)

1 No. 272 at 20-21.) In its reply, ATC agrees that in light of Presidio's representations,
2 this part of its motion in limine is now moot. (Doc. No. 267 at 8.) Accordingly, the
3 Court denies as moot ATC's motion to exclude all evidence and argument related to
4 Presidio's requests for a permanent injunction, an award of treble damages, and an
5 award of attorneys' fees.

6 As to ATC's request to exclude all evidence and argument related to the
7 presumption of validity, in light of the Court's decision to try the issue of indefiniteness
8 to an advisory jury, Presidio may reference the presumption of validity during the jury
9 trial. Accordingly, the Court denies ATC's motion to exclude all evidence and
10 argument related to the presumption of validity without prejudice to any
11 contemporaneous objections at trial made outside the presence of the jury.

12 **X. ATC's Motion in Limine No. 5**

13 In its fifth motion in limine, ATC moves to exclude all evidence and argument
14 related to any alleged willful infringement by ATC. (Doc. No. 251 at 21-25.) ATC first
15 argues that the Court should exclude all evidence and argument related to any assertion
16 of willful infringement occurring prior to December 8, 2015. (Doc. No. 251 at 21-22.)
17 Presidio argues that because the Court granted its motion for summary judgment of its
18 affirmative defense of absolute intervening rights, ATC cannot be liable for any
19 infringement of the '356 patent prior to December 8, 2015, willful or otherwise.

20 (Id.; Doc. No. 267 at 8-9 (citing 35 U.S.C. § 252).) In response, Presidio argues that
21 evidence related to willfulness that predates the issuance of the reexamination certificate
22 remains relevant. (Doc. No. 272 at 22-23.) The Court agrees with Presidio. The Court
23 agrees with ATC that in light of the Court's ruling on absolute intervening rights, ATC
24 cannot be liable for any infringement, willful or otherwise, prior to December 8, 2015.
25 See 35 U.S.C. § 252; Marine Polymer Techs., Inc. v. HemCon, Inc., 672 F.3d 1350,
26 1361-62 (Fed. Cir. 2012) (en banc). Nevertheless, evidence of ATC's allegedly willful
27 conduct that occurred prior to December 8, 2015 remains relevant to Presidio's
28

1 assertions of willful infringement for the period occurring on or after December 8,
2 2015.⁶

3 ATC also argues that the Court should exclude all evidence and arguments
4 related to Presidio's assertions of willful infringement occurring after December 8, 2015
5 because Presidio failed to seek a preliminary injunction in the present case. (Doc. No.
6 251 at 22-23.) ATC argues that a patentee may not recover enhanced damages for any
7 infringement occurring after a complaint for patent infringement has been filed if the
8 patentee did not seek a preliminary injunction. (*Id.* (citing *In re Seagate Tech., LLC*,
9 497 F.3d 1360, 1374 (Fed. Cir. 2007)).) But, several district courts have rejected the
10 notion that the Federal Circuit's decision in *Seagate* created a per se bar to claims for
11 willful infringement based on post-filing conduct where the patentee did not seek a
12 preliminary injunction. *See, e.g., Monolithic Power Sys., Inc. v. Silergy Corp.*, No.
13 14-CV-01745-VC, 2015 WL 3799533, at *2-3 (N.D. Cal. June 18, 2015); *DataQuill*
14 *Ltd. v. High Tech Computer Corp.*, 887 F. Supp. 2d 999, 1014-17 (S.D. Cal. 2011); *Inv.*
15 *Tech. Group, Inc. v. Liquidnet Holdings, Inc.*, 759 F. Supp. 2d 387, 412 & n. 174
16 (S.D.N.Y. 2010). The Court agrees with the reasoning and conclusions set forth in
17 those district court decisions.

18 Finally, ATC argues that the Court should exclude all references and evidence
19 related to Presidio's assertions of willful infringement occurring after December 8, 2015
20 because it has presented substantial and reasonable invalidity and non-infringement
21 defenses in this case. (Doc. No. 251 at 24-25.) The Court has already rejected ATC's
22 contention that it is entitled to summary judgment on the issue of willfulness based on
23 its invalidity and non-infringement defenses. (Doc. No. 210 at 19-21.) Accordingly,
24 the Court denies ATC's request to exclude all evidence and argument related to
25

26 ⁶ If at trial such evidence becomes cumulative, excessive, time consuming, overly
27 prejudicial, or tangential, the Court reserves the right to limit such evidence upon a
28 contemporaneous objection made during the trial outside the presence of the jury.


1 Presidio's assertions of willful infringement occurring after December 8, 2015. In sum,
2 the Court denies ATC's fifth motion in limine without prejudice to any
3 contemporaneous objections at trial made outside the presence of the jury.

4 **Conclusion**

5 For the reasons above, the Court grants in part and denies in part Presidio's
6 motions in limine, and the Court grants in part and denies in part ATC's motions in
7 limine.

8 **IT IS SO ORDERED.**

9 DATED: March 25, 2016

10 
11 MARILYN L. HUFF, District Judge
12 UNITED STATES DISTRICT COURT
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US006816356B2

(12) **United States Patent**
Devoe et al.

(10) **Patent No.:** **US 6,816,356 B2**
(45) **Date of Patent:** **Nov. 9, 2004**

(54) **INTEGRATED BROADBAND CERAMIC CAPACITOR ARRAY**

(76) Inventors: **Daniel Devoe**, 1106 Barcelona, San Diego, CA (US) 92107; **Alan Devoe**, 5715 Waverly Ave., La Jolla, CA (US) 92037; **Lambert Devoe**, 3446 Stadium Pl., San Diego, CA (US) 92107

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(21) Appl. No.: **10/412,992**

(22) Filed: **Apr. 14, 2003**

(65) **Prior Publication Data**

US 2004/0042156 A1 Mar. 4, 2004

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/150,202, filed on May 17, 2002, now Pat. No. 6,587,327.

(51) **Int. Cl.**⁷ **H01G 9/042**; H01G 9/045; H01G 4/32

(52) **U.S. Cl.** **361/309**; 361/303; 361/311

(58) **Field of Search** 361/301.4, 303, 361/306.1, 306.3, 308.2, 309, 328-330, 310-311

(56) **References Cited**

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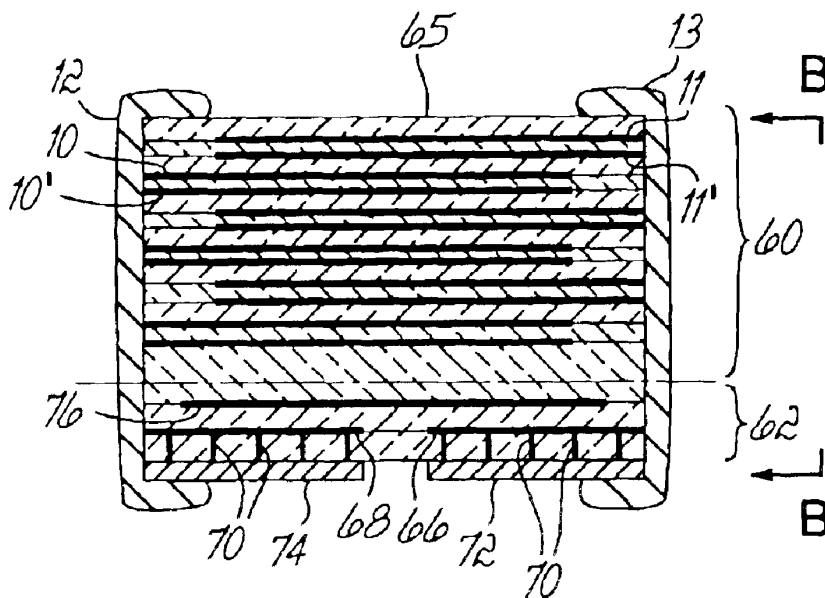
Primary Examiner—Eric Thomas

(74) *Attorney, Agent, or Firm*—Wood, Herron & Evans, L.L.P.

(57) **ABSTRACT**

A monolithic capacitor structure includes opposed and overlapping plates within a dielectric body, which are arranged to form a lower frequency, higher value capacitor. Other conductive structure is located either inside the dielectric body or on an external surface thereof and is effective to form a higher frequency, lower value capacitor in parallel with the lower frequency, higher value capacitor. The resulting array of combined series and parallel capacitors integral with the dielectric body provides effective wideband performance in an integrated, cost-effective structure.

34 Claims, 7 Drawing Sheets

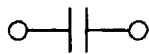


U.S. Patent

Nov. 9, 2004

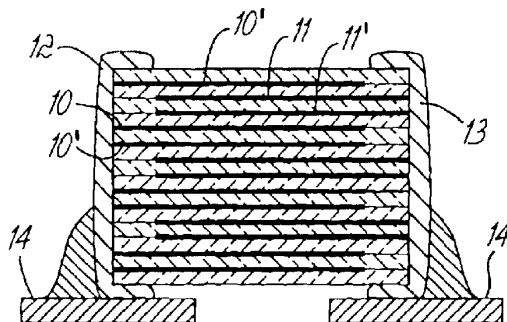
Sheet 1 of 7

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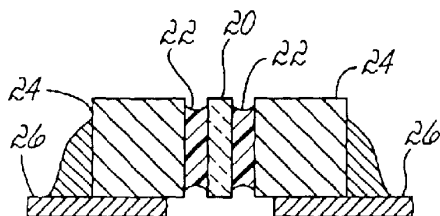
PRIOR ART

FIG. 1A



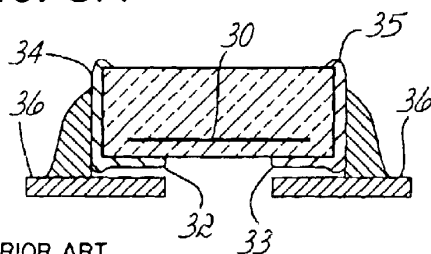
PRIOR ART

FIG. 2A



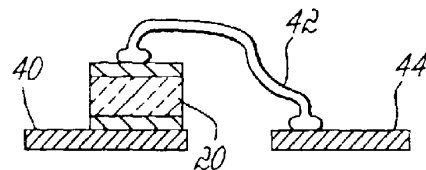
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FIG. 3A



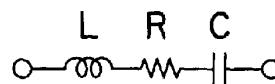
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FIG. 4A



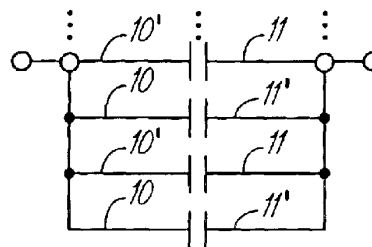
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FIG. 5A



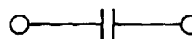
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FIG. 1B



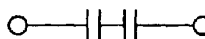
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FIG. 2B



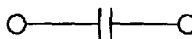
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FIG. 3B



PRIOR ART

FIG. 4B



PRIOR ART

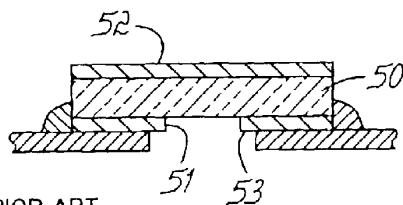
FIG. 5B

U.S. Patent

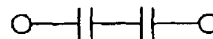
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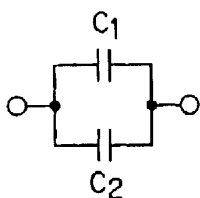
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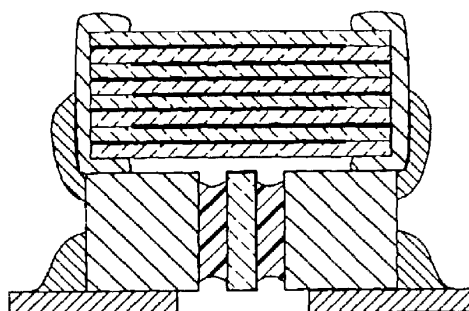
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FIG. 6A



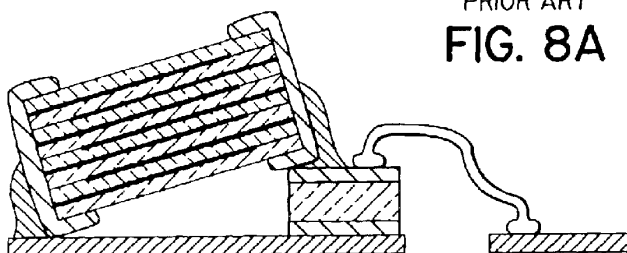
PRIOR ART
FIG. 6B



PRIOR ART
FIG. 7



PRIOR ART
FIG. 8A



PRIOR ART
FIG. 8B

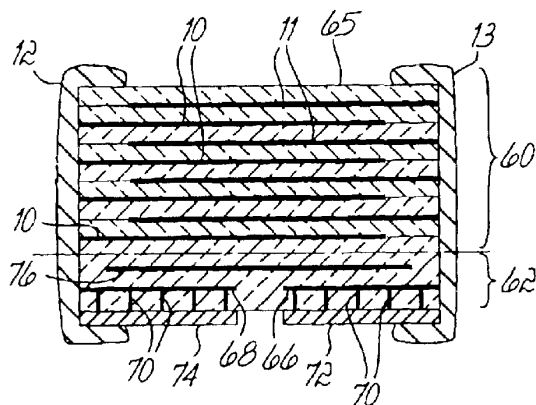


FIG. 9A

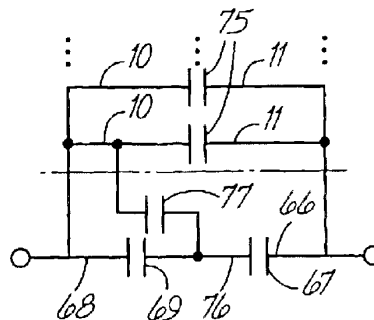


FIG. 9B

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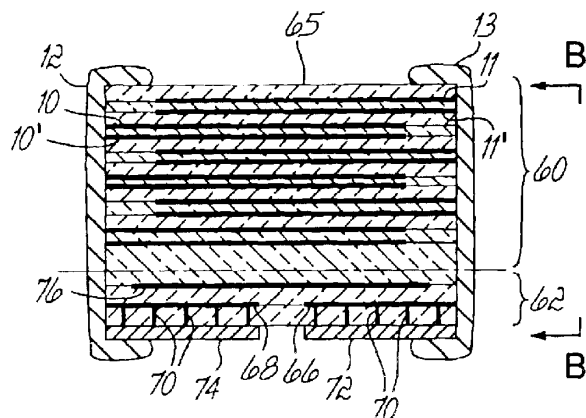


FIG. 10A

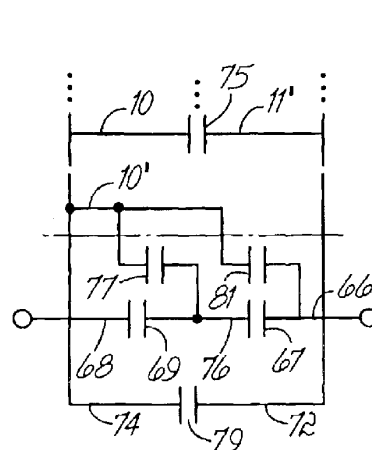


FIG. 10B

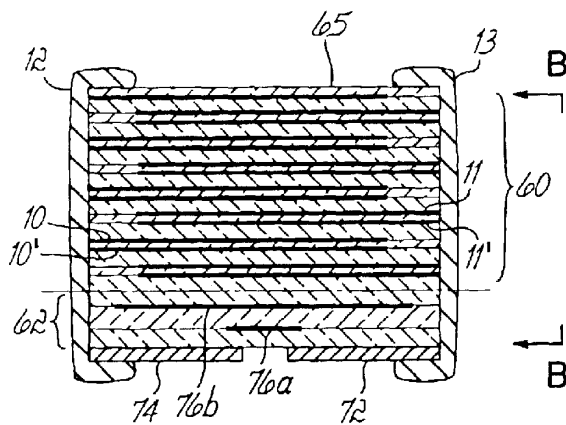


FIG. 11A

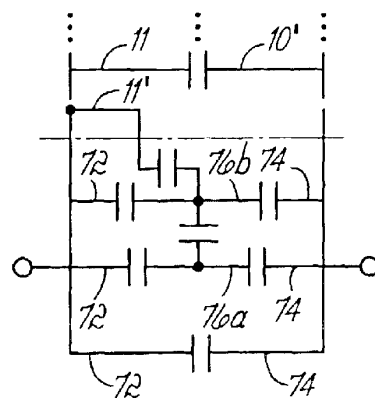


FIG. 11B

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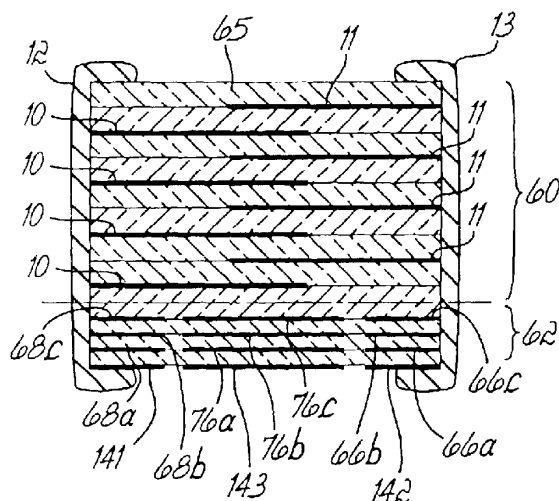


FIG. 12A

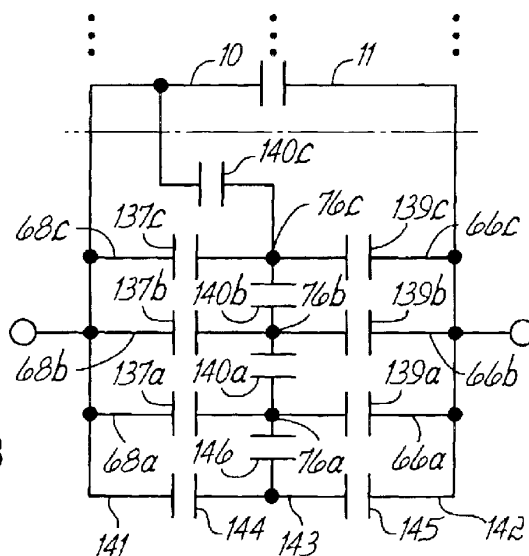


FIG. 12B

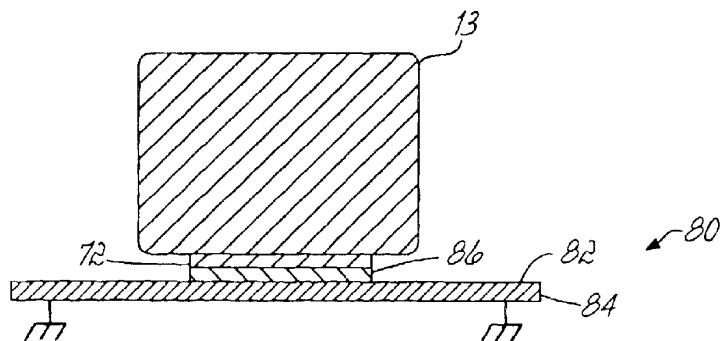


FIG. 13

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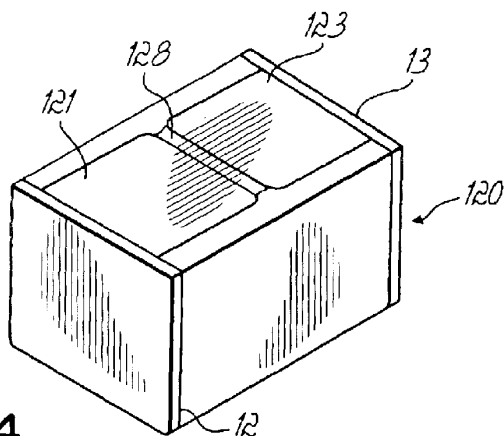


FIG. 14

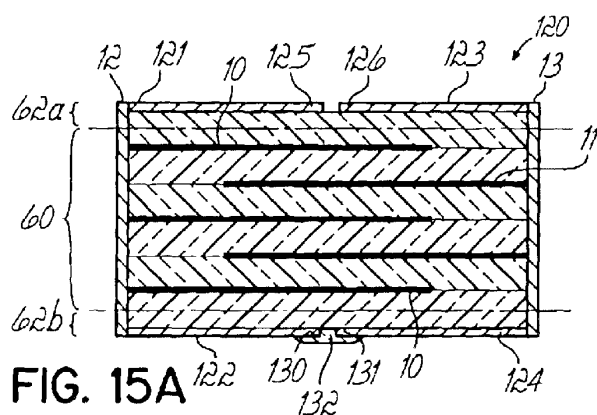


FIG. 15A

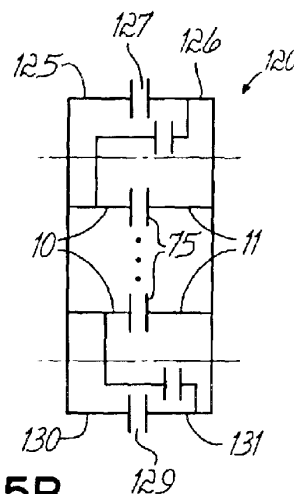


FIG. 15B

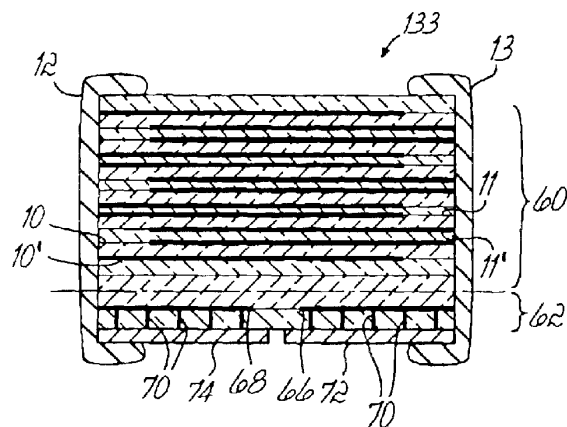


FIG. 20A

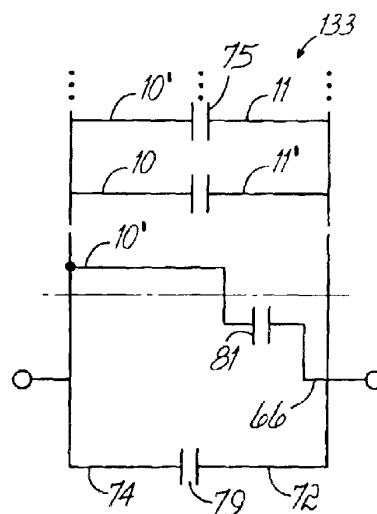


FIG. 20B

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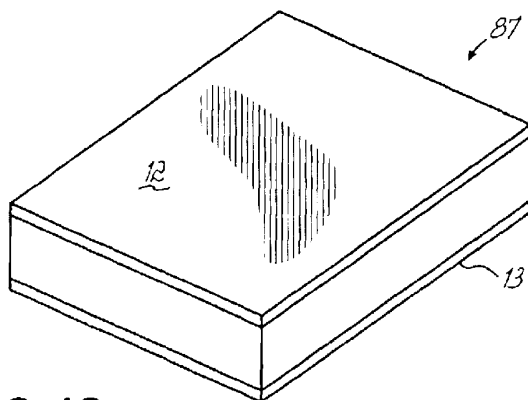


FIG. 16

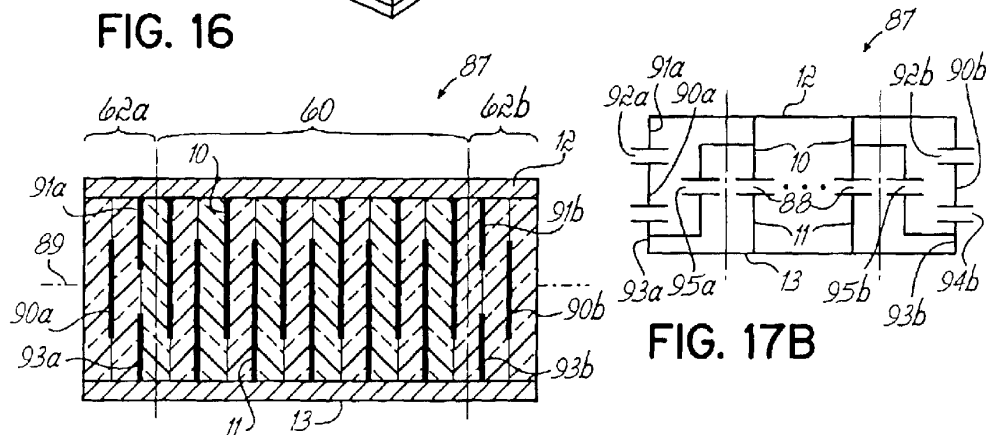


FIG. 17B

FIG. 17A

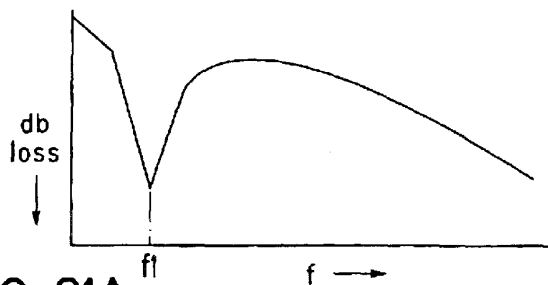


FIG. 21A

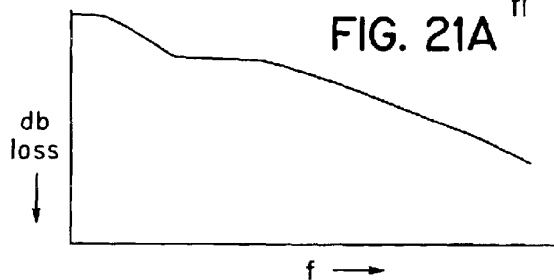


FIG. 21B

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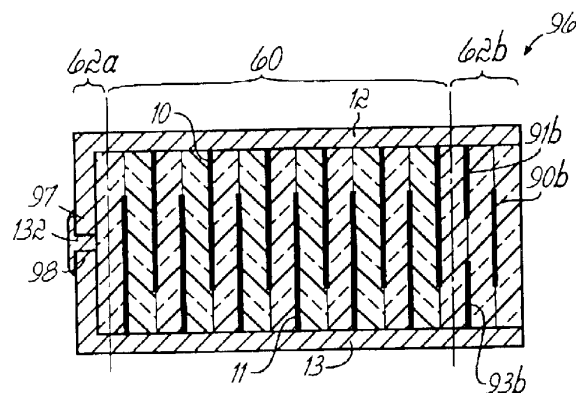
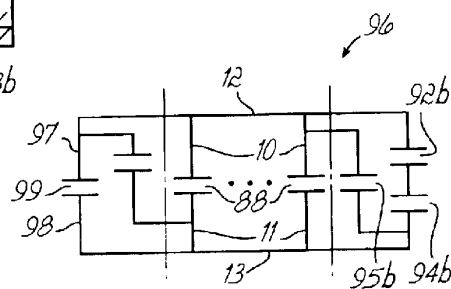


FIG. 18A

FIG. 18B



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**INTEGRATED BROADBAND CERAMIC
CAPACITOR ARRAY**

This application is a continuation-in-part of U.S. application Ser. No. 10/150,202, filed May 17, 2002, now U.S. Pat. No. 6,587,327.

FIELD OF THE INVENTION

The present invention relates to miniature monolithic capacitors.

BACKGROUND OF THE INVENTION

The development of integrated circuits has made it possible to place many circuit elements in a single semiconductor chip. Where part or all of the circuit is an analog circuit, such as a radio frequency transmitter or receiver, audio amplifier, or other such circuit, circuit design requires lumped elements that cannot be readily realized in monolithic integrated circuits. Capacitors in particular are frequently created as separate elements from the integrated circuit. The electronic device thus typically includes monolithic integrated circuits combined with external capacitors.

For such applications, monolithic ceramic capacitors have been used. For example, single capacitors made of ceramic materials, are known in the art. These are relatively small in size and can be surface mounted to a surface mount circuit board, or glued and wire bonded to a substrate in a hybrid circuit layout.

FIG. 1A shows a lumped element model for a capacitor. In this ideal model, the capacitor provides an ideal voltage/current relationship:

$$i = C \frac{dv}{dt}$$

Unfortunately, particularly at high frequencies, capacitors used in electronic circuits deviate substantially from this ideal relationship. These deviations are generally modeled as an equivalent series resistance and equivalent series inductance, along with a capacitance that varies over frequency. In accordance with this model, a capacitor behaves as a series L-R-C circuit as illustrated in

FIG. 1B. At lower frequencies, the dominant impedance is the capacitive element C; however, at increasing frequencies the impedance of the capacitive element C decreases and the impedance of the inductive element L increases; until, at the resonant angular frequency $(LC)^{-0.5}$, the inductive element becomes predominant, and the element ceases performing as a capacitor. Simultaneously, the capacitor dissipates some stored energy (typically through heating of conducting plates and traces), as represented by the series resistance R.

Capacitor design typically must compromise between capacitance value and equivalent series resistance and inductance; greater capacitance typically can be created only at the cost of increased series resistance and inductance. Accordingly, equivalent series resistance and inductance are not avoidable, and electronic design must take them into account, particularly in high frequency products such as broadband receiver/transmitters, short wave devices, and the like.

Various monolithic ceramic structures have been developed to provide relatively small capacitors for highly integrated applications. A first such structure, shown in FIG. 2A, is known as a "multilayer ceramic capacitor". This structure is formed by stacking sheets of green tape or greenware, i.e.,

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thin layers of a powdered ceramic dielectric material held together by a binder that is typically organic. Such sheets, typically, although not necessarily, of the order of five inches by five inches, can be stacked with additional layers, thirty to one hundred or so layers thick. After each layer is stacked, conductive structures are printed on top of the layer, to form internal plates that form the desired capacitance. When all layers are stacked, they are compressed and diced into capacitors. Then, the compressed individual devices are heated in a kiln according to a desired time-temperature profile, driving off the organic binder and sintering or fusing the powdered ceramic material into a monolithic structure. The device is then dipped in conductive material to form end terminations for the internal conductive structures, suitable for soldering to a surface mount circuit board or gluing and wire bonding to a hybrid circuit.

The printed conductive structures are arranged in a pattern that provides one or more parallel-plate capacitors. For example, in the typical structure shown in FIG. 2A, internal plates **10** and **11** have been formed which extend from alternate sides of the combined structure. The conductive material **12** and **13** at each end forms a common connection point for each plate extending to that side. Plates **10** extend in pairs, each including an upper plate **10** and a lower plate **10'** from the left side, and plates **11** extend similarly in pairs, each including an upper plate **11** and a lower plate **11'** from the right side, forming parallel plate capacitors between each set of adjacent plates **10** and **11'** and **10'** and **11**. The illustrated structure is arranged to reduce equivalent series resistance and inductance, by virtue of the plates **10** and **11** extending in pairs from each side. In other embodiments, plates extend individually from opposite sides, such as in the multilayer ceramic capacitor shown in FIGS. 7A and 7B and discussed below.

Each pair of overlapping plates **10** and **11** extending from opposite side metallizations **12** and **13**, forms a parallel plate capacitor, such that the entire device forms a network of parallel connected capacitors as shown in FIG. 2B, which can be soldered to the traces **14** of a surface mount circuit board. The resulting equivalent capacitance value is relatively large for the device size, albeit subject to imperfections due to resistance in the many current-carrying conductive structures, and inductance resulting from many plates carrying currents flowing in opposite directions.

FIG. 3A shows an alternative known capacitor structure developed by Dielectric Laboratories, Inc. of Cazenovia, N.Y. and described in detail in U.S. Pat. No. 6,208,501. This structure includes a ceramic chip **20** having conductive end plates on its opposed surfaces, which is bonded by conductive epoxy **22** to conductive end terminations **24** which can then be soldered to the traces **26** on a surface mounting circuit board. As can be seen in FIG. 3B, the net effect is a single capacitor, rather than a parallel array, between the conductive ends of the device. As there is only one capacitor in this device, it has good high frequency performance (reduced resistance and inductance) but has a relatively low capacitance value.

FIG. 4A shows a second alternative capacitor structure developed by American Technical Ceramics Corporation and described in detail in U.S. Pat. No. 5,576,926. This structure includes a layered ceramic chip having an internal conductive plate **30** positioned to overlay conductive plates **32** and **33** extending along an outer surface of the device from conductive end terminations **34** and **35**. As before, the conductive end terminations may be readily soldered to the traces **36** of a surface mount circuit board. As seen in FIG. 4B, the net effect is a series combination of two capacitors,

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between the conductive ends of the device. As in this case there is a series combination of capacitors (which has a lower capacitance value than either capacitor individually), the device has good high frequency performance but relatively low capacitance value.

A third alternative capacitor is shown in FIG. 5A. Here, the ceramic chip 20 with opposed conductive surfaces, shown in FIG. 3A, has been mounted directly to the trace 40 of a hybrid circuit device. The opposed side of the capacitor has been wire bonded through wire bond 42, to the opposite trace 44 of the hybrid device. In this case, the equivalent circuit diagram (FIG. 5B), and performance issues are the same as those with regard to the capacitor of FIG. 3A.

A final alternative capacitor is shown in FIG. 6A. Here, a series capacitor (FIG. 6B) has been formed between metallizations 51, 52 and 53 that are strictly on the outer surfaces of a ceramic chip 50. This alternative is similar to the device shown in FIG. 4A, but the internal metallization has been moved to the outer surface. This device is less complex to manufacture than the device of FIG. 4A, but provides lower capacitance value owing to the distance between the metallization layers 51 and 53 and the opposed metallization layer 52.

As can be seen, each known structure represents a tradeoff between capacitance value and broadband performance. One known approach to managing series resistance and series inductance, is to parallel connect two capacitors, such as shown in FIG. 7. In FIG. 7, a larger value capacitor C1, chosen for its large capacitance value, is connected in parallel to a smaller value capacitor, chosen for its small equivalent series resistance. As will be appreciated, this circuit exhibits multiple resonant frequencies, a first at the frequency $(L1C1)^{-0.5}$, and a second at the frequency $(L2C2)^{0.5}$. Typically the larger valued capacitor C1 would have the larger series resistance and inductance value and thus the lower resonant frequency, whereas the smaller valued capacitor C2 would be chosen for high frequency performance resulting from low series resistance and series inductance values. At low frequencies, the larger value of C1 will produce acceptable performance, whereas at higher frequencies, where C1 behaves increasing less like a capacitor and more like an inductance, C2 will be below its resonant frequency and perform well as a capacitor throughout the frequency of interest.

The parallel capacitor approach has been utilized in conjunction with ceramic chip capacitors, to improve the high frequency performance of those capacitors. Specifically, referring to FIG. 8A, one known approach to forming a broadband ceramic capacitor structure, uses a multilayer capacitor such as that described above with reference to FIG. 2A, stacked above and soldered or bonded to a single layer, high frequency capacitor such as that described above with reference to FIG. 3A. The resulting combined structure is wave soldered or bonded together with epoxy, producing a parallel combination of low and high-frequency capacitors seeking to achieve broadband performance. A second known implementation of this concept is shown in FIG. 8B. There, one of the side terminals of a multilayer capacitor such as described above with reference to FIG. 2A, is tilted against the upper surface of a single-layer, high frequency capacitor such as that described above with reference to FIG. 6A. The upper surface of the single-layer capacitor thus forms a first terminal of a parallel capacitor combination, that is wire bonded to a circuit board trace 36 in the manner described above with reference to FIG. 5A. The opposite side terminal of the multi-layer capacitor and the bottom surface of the single-layer capaci-

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tor are connected to a second trace 36 of the circuit board, thus forming the second terminal of the combined parallel capacitor combination.

While parallel capacitor combinations such as shown in FIGS. 8A and 8B have been used with some success in commercial devices, these combinations suffer from a number of drawbacks. First, the measured capacitance of these parallel combinations exhibit variations (resonances and dropouts), likely due to a mismatch between the resonances of the effective L-R-C circuits that are created by the parallel connected capacitors. Furthermore, the upper frequency response of even these parallel combinations may not meet the requirements of very wide band (GHz) devices in current use. Also, the mechanical stacking of dual ceramic capacitors in the manner shown is not easily compatible with "tape and reel" assembly methods and thus, are cumbersome and expensive to implement in mass production. Further, mechanically stacking dual ceramic capacitors increases the overall height of the circuit board assembly above that of a board having only single ceramic capacitors.

There accordingly is a remaining need for a broadband capacitor meeting the performance needs of modern wideband circuits, while maintaining the size and cost efficiencies of existing ceramic capacitors.

SUMMARY OF THE INVENTION

The present invention provides a capacitor having an effective wideband performance in an integrated, cost-effective structure. The capacitor of the present invention is an integrated array of capacitors connected in series and/or parallel circuits in a substantially monolithic dielectric body. The composition of the integrated capacitor array can be varied in order to tune the wideband capacitor to a particular application. Further, the integrated capacitor array of the present invention provides superior performance by providing less insertion loss than combinations of discrete capacitors. In addition, the wideband capacitor of the present invention is smaller and easier to handle and mount on a circuit board than combinations of discrete capacitors.

In accordance with principles of the present invention, a monolithic capacitor includes both a multi-layer, lower frequency, higher valued capacitor and a higher frequency, lower valued capacitor. More specifically, a dielectric body includes a series of conductive plates arranged in a substantially parallel and opposed configuration in one region of the body, to form the lower frequency, lower value, capacitor. In another region of the dielectric body, other conductive structures or plates are positioned to form a higher frequency, lower value capacitance in parallel with the lower frequency, higher value capacitance.

In specific disclosed embodiments, the conductive structures may be one or more conductive plates positioned inside the dielectric body with respect to a conductive floating plate. Alternatively, the conductive structures may be placed either on an external surface of the dielectric body, or inside the dielectric body and connected by one or more vias to plates on an external surface of the dielectric body. The conductive structures can further be opposed edges that are positioned to form a fringe-effect capacitance.

In the disclosed embodiments, the capacitor has a substantially monolithic dielectric body formed from a plurality of ceramic tape layers laminated together in a green ceramic state and fired to form a sintered or fused monolithic ceramic structure. However, other dielectric materials and assembly methods may be used. Further, in the disclosed embodiments the dielectric body has a hexahedral shape, with electrical

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contacts positioned on opposed end surfaces. However, other shapes may also be used.

These embodiments, and the above and other objects and advantages of the present invention shall be made apparent from the accompanying drawings and the description thereof.

BRIEF DESCRIPTION OF THE DRAWING

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and, together with a general description of the invention given above, and the detailed description of the embodiments given below, serve to explain the principles of the invention.

FIGS. 1A and 1B illustrate a capacitor and the known equivalent model therefor.

FIGS. 2A and 2B illustrate a known multilayer monolithic capacitor structure and its equivalent circuit diagram.

FIGS. 3A and 3B illustrate a known high frequency single layer monolithic capacitor structure and its equivalent circuit diagram.

FIGS. 4A and 4B illustrate a known high frequency buried layer monolithic capacitor structure and its equivalent circuit diagram.

FIGS. 5A and 5B illustrate a known high frequency single layer monolithic capacitor structure and its equivalent circuit diagram.

FIGS. 6A and 6B illustrate a known high frequency single layer monolithic capacitor structure and its equivalent circuit diagram.

FIG. 7 illustrates a circuit diagram of a known parallel combination of capacitors to form a wideband capacitor.

FIGS. 8A and 8B illustrate known implementations of a parallel combination of capacitors using known capacitors previously illustrated.

FIG. 9A illustrates a first embodiment of an integrated wideband capacitor in accordance with one aspect of the present invention, and FIG. 9B illustrates an equivalent circuit diagram.

FIG. 10A illustrates a second embodiment of an integrated wideband capacitor in accordance with further aspects of the present invention, and FIG. 10B illustrates an equivalent circuit diagram for this embodiment.

FIG. 11A illustrates a third embodiment of an integrated wideband capacitor in accordance with further aspects of the present invention, and FIG. 11B illustrates an equivalent circuit diagram for this embodiment.

FIG. 12A illustrates a fourth embodiment of an integrated wideband capacitor in accordance with further aspects of the present invention, and FIG. 12B illustrates an equivalent circuit diagram for this embodiment.

FIG. 13 is an end view of the embodiments of FIGS. 10A and 11A in accordance with further aspects of the present invention.

FIG. 14 is a perspective view of another embodiment of an integrated wideband capacitor in accordance with the principles of the present invention.

FIG. 15A illustrates an embodiment of the capacitor of FIG. 14, and FIG. 15B illustrates an equivalent circuit diagram for this embodiment.

FIG. 16 is a perspective view of a still further embodiment of an integrated wideband capacitor in accordance with the principles of the present invention.

FIG. 17A illustrates an embodiment of the capacitor of FIG. 16, and FIG. 17B illustrates an equivalent circuit diagram for this embodiment.

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FIG. 18A illustrates another embodiment of the capacitor of FIG. 16, and FIG. 18B illustrates an equivalent circuit diagram for this embodiment.

FIG. 19A illustrates a further embodiment of the capacitor of FIG. 16, and FIG. 19B illustrates an equivalent circuit diagram for this embodiment.

FIG. 20A illustrates a still further embodiment of the capacitor of FIG. 16, and FIG. 20B illustrates an equivalent circuit diagram for this embodiment.

FIG. 21A is a graph representing insertion loss of a combination of discrete capacitors such as those shown in FIG. 8A.

FIG. 21B is a graph representing insertion loss of an integrated wideband capacitor such as that shown in FIG. 9A.

DETAILED DESCRIPTION

Referring now to FIG. 9A, a first embodiment of an integrated capacitor in accordance with certain aspects of the invention, can be described. In this embodiment, an integrated multi-layer and high frequency capacitor includes an upper section 60 including a multi-layer structure similar to that discussed above with reference to FIG. 2A, including plates 10 and 11 extending from conductive contacts 12 and 13, respectively, on opposite sides of a ceramic dielectric body. In this embodiment, individual plates extend from each side contact, rather than pairs of plates as shown in FIG. 2A. Using single plates in this manner increases the series inductance and resistance, for the reason that more current is caused to flow over each individual plate; however, more plates can be included in the capacitor using single plates, allowing an increase in capacitance value. Thus, the decision to use single or multiple plates is a tradeoff between capacitance and series resistance and inductance.

In the embodiment of FIG. 9A, a high frequency capacitor is formed in a lower section 62, from two additional internal plates 66 and 68 which extend from the end contacts 13 and 12, respectively. These internal plates are connected by vias 70 to external conductive plates 72 and 74, respectively, which are printed on the exterior of the ceramic dielectric body 65. Multiple conductive paths are thus provided to the interior plates 66 and 68 to reduce series resistance. Plates 66 and 68 are capacitively coupled to a floating interior plate 76, forming a series combination of capacitances 67, 69, from plate 66 to plate 76, and from plate 76 to plate 68.

It has been found that the high frequency performance of the device of FIG. 9A is affected by the relative position of plate 76 and the nearest multi-layer plate 10 in upper section 60 of the device directly above plate 76. Accordingly, the high frequency performance is a function of the capacitance between plate 76 and the plate 10 immediately above plate 76 in the upper section 60 of the device.

Referring to FIG. 9B, the equivalent circuit diagram of operative capacitances in the device of FIG. 9A, includes not only capacitances 67, 69, 75 between plates 66, 76 and 68, and between plates 10 and 11, respectively, but further capacitances 77 between plate 76 and plate 10 from the upper section. The multiplicity of capacitances and their interrelationship is believed to permit fine-tuning of high frequency response of the device, e.g. by tuning out resonances that cause dips in the curve of capacitance vs. frequency. When the multiple capacitors have peak performance areas that are closely spaced in the high frequency (GHz) range of operation, when combined, the result can be a flatter frequency response than is possible in prior

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approaches of stacking multiple discrete ceramic capacitors such as shown in FIGS. 8A and 8B.

FIG. 21A illustrates a typical plot of insertion loss as a function of frequency that is obtained when discrete capacitors are connected in parallel substantially as shown in FIG. 8A. Typically, the insertion loss experiences one or more increases, such as that shown at a frequency f_1 . FIG. 21B illustrates a plot of insertion loss as a function of frequency for the broadband capacitor illustrated in FIG. 9A. As can be seen, the insertion loss is relatively smooth throughout a broad range of frequencies. In the example of FIG. 9A, the bulk capacitance in the larger value, low frequency upper section 60 can be made to have a capacitance in a range of about 10–100 nanofarads. Further, if the capacitance in the lower value, high frequency lower section 62 is made to have a capacitance of about 82 picofarads, the insertion loss plot of FIG. 21B is relatively smooth over a frequency range of about 10 KHz to 10 GHz and higher.

FIG. 10A illustrates an alternative device structure that embellishes the capacitor network described in the theory of operation of the device of FIG. 9A. Specifically, in this device, the external conductive plates 72 and 74 in the lower section 62 of the device have been extended toward each other so as to create a capacitance between plates 72 and 74 based upon fringe electric field extending to and from the adjacent edges of those plates.

Also, the edges of floating internal plate 76 have been withdrawn toward the interior of the device, which has the effect of lowering the capacitance and inductance between plate 76 and plates 72 and 74. The reduced capacitance results from the reduced area of plate 76 that is opposed by plates 72 and 74. The reduced inductance results from reduced distances through which there are opposed current flows in plates 76, 72 and 74. Furthermore, the withdrawal of the plate 76, permits some direct capacitive coupling between plate 66 of the lower section 62 of the device and plate 10' of the upper section of the device, introducing an additional capacitance to the device.

Finally, in this device, dual plates have been used in the upper section 60 of the device to reduce series resistance and inductance, albeit at some expense of capacitance value. The use of dual or single plates in the upper section 60 is a possible design choice for any embodiment of the invention described herein, regardless of the elements used in the lower section 62.

Thus, the equivalent circuit diagram of the device of FIG. 10A, shown in FIG. 10B, as compared to the diagram of FIG. 9B, includes an additional capacitance 79 between plates 72 and 74. This additional capacitance is shown in dotted outline in FIG. 10A, reflecting that the fringe capacitance between plates 72 and 74 may be relatively small compared to the other parallel plate capacitances in the remainder of the lower section 62 of the device. However, this capacitance may well affect the very high frequency performance of the device.

The equivalent circuit diagram of FIG. 10B is further different from FIG. 9B, in an additional capacitance 81 between plate 66 and plate 10'. This additional capacitance will provide an additional resonance that can aid in flattening the high frequency performance of the device.

The equivalent circuit diagram of FIG. 10B is still further different from FIG. 9B, in that the capacitances from plates 66 and 76 to plate 10' in the upper section 60 of the device are independently connected to the end terminal, i.e., current flows to and from plate 10' independently of any current flow in the plates 10 and 11' which form the lowermost parallel

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plate capacitor in section 60 of the device. Providing an independent current flow path, via plate 10', for capacitive current flowing from plate 76, may affect the equivalent series resistance and inductance of the high frequency portion of the device and thus prove an important design feature. It will be appreciated that an independent current path for capacitances coupled from the lower section 62 of the device, provided by a plate positioned in the manner of plate 10' in FIG. 10A, may be used in any embodiment of the invention, regardless of whether that embodiment also includes dual plates throughout the upper section 60 of the device as is the case in FIG. 10A.

Referring now to FIG. 11A, in a further embodiment of the invention, the upper section 60 is formed as in FIG. 10A, of plates that extend in pairs 10/10' and 11/11' from the end terminals 12 and 13. The lower section 62 includes a structure distinct from that of FIG. 10A in several respects. First, the internal plates 66 and 68 and the vias connecting those plates to external plates 72 and 74, have been eliminated. In the space occupied by plates 66, 68 and 76 in the device of FIG. 10A, are two floating plates 76A and 76B, which capacitively couple directly to the external plates 72 and 74. Plate 76A is placed closest to plates 72 and 74 and has a smaller horizontal extent than plate 76B. Capacitive coupling can thus occur, between plates 72 and 74 and plate 76A, as well as between plates 72 and 74 and plate 76B. Furthermore, plates 76A and 76B are capacitively coupled to each other. Also, plate 76B is capacitively coupled to the lowermost plate 11' of the upper section 60 of the device.

The resulting complex network of capacitances is shown in FIG. 11B. As can be seen, the network of capacitances provides a substantial number of capacitances that can be adjusted (e.g., by altering the size, placement or number of the floating plates 76, and the size of the plates 72 and 74), to optimize high frequency performance of the device.

Another embodiment is illustrated in FIG. 12A. In this embodiment, single plates 10 and 11 are used in the upper section of the device. However, the single plates 10 and 11 are withdrawn relative to their positions in the devices of FIGS. 9A, 10A and 11A, reducing the overlap of adjacent plates 10 and 11. As a result, the capacitance and series inductance of the capacitors in the upper section 60 of the device are reduced, due to decreased opposed area and decreased opposed current flows. Furthermore, in the lower section 62 of the device, the arrangement of plates shown in the preceding figures has been replaced with a plurality of interior plates 66A, 66B and 66C extending from terminal 13, and a plurality of interior plates 68A, 68B and 68C extending from terminal 12, each respectively opposed edge-to-edge by one of a plurality of interior floating plate 76A, 76B and 76C to form series capacitor pairs. Furthermore, the floating plates 76A, 76B and 76C are capacitively coupled to each other, and the uppermost floating plate 76C is capacitively coupled to the lowermost plate 10 of the upper section 60 of the device. The number of floating plates 76 and interior plates 66 and 68 is subject to adjustment to achieve a desired capacitance. Furthermore, the plates 66 and 68 may be positioned on alternating layers relative to plates 76 to decrease the likelihood of breakdown paths forming along layer boundaries in the ceramic dielectric material.

FIG. 12B illustrates the equivalent circuit diagram for the device of FIG. 12A. Notably, the plural series capacitor pairs 137, 139 interconnected by capacitors 140 in this embodiment provide, as before, a large number of capacitances that may be adjusted to optimize high frequency performance. It will be noted that additional, variable capacitances may be

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created by staggering the widths of the floating plates 76 relative to the plates 66 and 68 so that plates 76, 66 and 68 couple face-to-face to each other as well as through fringe fields coupled to the edges of those plates.

In a still further embodiment, external conductive plates 141 and 142 are connected to the external conductive contacts 12, 13, respectively. An external floating conductive plate 143 is placed between the ends of the conductive plates 141, 142 and is not connected to either of the contacts 12, 13. As shown in FIG. 12B, the floating conductive plate 143 is sufficiently close to the ends of the plates 141, 142 as to form serial fringe-effect capacitances 144, 145 therebetween and an interconnecting capacitance 146 with plate 76a. Again, the capacitances can be adjusted to optimize high frequency performance.

Referring now to FIG. 13, an end view of the devices of FIGS. 10A and 11A can be used to discuss additional high frequency optimization steps. FIG. 13 shows a device mounted to a surface mount circuit board 80, having a non-conductive outer surface 82 and a buried ground plane 84 of conductive material. Conductive traces 86 run along the upper surface 82 of board 80, to interconnect components such as integrated circuits, discrete capacitors, and the like. The devices of FIGS. 10A and 11A include external conductive plates 74 and 76 which may be directly mounted to these conductive traces using conductive epoxy, or wave soldering.

FIG. 13 illustrates that the width of the capacitive device may be wider than the width of the conductive traces 86 formed on the circuit board 80. In this event, the external conductive plates 72 and 74 may be formed with a width that matches that of the traces 86, to avoid unintended capacitive coupling to ground plane 84 from plates 72 and 74. As seen in FIG. 13, when plates 72 and 74 (plate 72 being seen in FIG. 13) are the same width as the traces 86, no additional capacitive coupling to ground is created by plates 72 and 74. The width of the internal plates such as 66, 68, 76, 10 and 11 may be made narrow as well, but likely can be made as wide as the entire device, for the reason that plates 72 and 74 are substantially closer to ground plane 84 than the other plates internal to the device and thus are more likely to create coupling to ground.

FIGS. 14 and 15A illustrate a further embodiment of a capacitor 120 comprised of an integrated capacitor array. Overlapping conductive plates 10, 11 are connected to external conductive contacts 12, 13, respectively. Conductive pads 121, 122 extend over respective upper and lower surfaces of the capacitor 120 and are electrically connected to the contact 12. Similarly, conductive pads 123, 124 also extend over respective upper and lower surfaces of the capacitor 120 are connected to the contact 13. The conductive pads 121-124 facilitate mounting the capacitor 120 to circuits on a printed circuit board. As previously described, a lower frequency, higher value capacitor section 60 provides a plurality of parallel capacitances 75 between conductive plates 10, 11.

The ends 125, 126 of the respective conductive pads 121, 123 are disposed on the upper surface of the capacitor 120 sufficiently close to each other so that a fringe-effect capacitance 127 (FIG. 15B) is formed therebetween. The fringe-effect capacitor 127 formed between the ends 125, 126, of respective pads 121, 123 provides an integrated, higher frequency, lower value capacitance section 62a. In a similar manner, a fringe-effect capacitance 129 is formed between the ends 130, 131 of the respective pads 122, 124 on a lower side of the integrated capacitor 120. The fringe-effect

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capacitance 129 provides a second, higher frequency, lower value capacitance section 62b that is substantially identical to the capacitance section 62a. While the fringe effect capacitances 127, 129 may be relatively small compared to other overlapping parallel plate capacitances 75 within the capacitor 120, the fringe effect capacitances 127, 129 have been found to effect the high frequency performance of the capacitor 120.

The ends 130, 131 may be separated by only 0.002 of an inch. In order to minimize the opportunity for conduction between the ends 130, 131 of the respective pads 122, 124, an insulating coating or material 132 is provided therebetween. The insulating coating 132 consists of either a high temperature fired insulator, for example, glass, or a low temperature curing material, for example, epoxy, silicone, polymer, etc. However, in other embodiments, depending on the size of the gap between the ends 125, 126 of respective plates 121, 123 and other factors, a capacitor designer may choose not to use an insulating material between the ends 125, 126. FIG. 14 also illustrates another alternative embodiment in that the ends of the chip are provided with an insulating coating 128 to provide an electrical barrier from shorting with other devices. The insulating coating 128 is substantially similar to the insulating coating 132. An oxidation process or an anodizing process of the underlying termination material is also compatible and a viable alternative.

FIG. 16 illustrates another example of a broadband capacitor 87 having integrated capacitor array. As shown in FIG. 17A, the broadband capacitor 87 includes a low frequency, higher value bulk capacitor section 60 comprised of a first plurality of conductive plates 10 connected to an external contact 12 and a second plurality of opposed parallel plates 11 connected to the external contact 13. As shown in FIG. 17B, the plates 10, 11 form capacitors 88 within a bulk capacitance section 60. It should be noted that the plates 10, 11 are disposed at an orientation that is substantially perpendicular to a longitudinal centerline 89 of the broadband capacitor 87. Further, in use, one of the metallized contact areas 12, 13 is attached to a conductor extending over a major planar surface of a printed circuit board. Thus, the plates 10, 11 are also substantially perpendicular to the major planar surface of the printed circuit board.

The broadband capacitor 87 further has a pair of higher frequency, lower value capacitor sections 62a, 62b that are disposed at opposite ends of the bulk capacitor section 60. Each of the capacitor sections 62a, 62b has a respective conductive floating plate 90a, 90b that is not connected to either of the metallized contact areas 12, 13. First electrode plates 91a, 91b form respective capacitors 92a, 92b with respective floating plates 90a, 90b. Similarly, electrode plates 93a, 93b form respective capacitors 94a, 94b with the respective floating plates 90a, 90b. The plates 91, 93 are non-overlapping with each other and operative to provide a series circuit of the capacitors 92, 94. In addition, capacitors 95a, 95b are formed between one of the plates 10 and a respective plate 93a, 93b.

Referring to FIGS. 18A and 18B, another example of an integrated capacitor array is represented by the broadband capacitor 96. The low frequency capacitance section 60 and high frequency capacitance section 62b of FIGS. 18A and 18B are substantially identical in construction to the low frequency capacitor section 60 and high frequency capacitor section 62b previously described with respect to FIGS. 17A, 17B. However, as shown in FIG. 18A, the metallized plates 12, 13 extend over an end of the capacitor 96 and have

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respective ends **97, 98** sufficiently close to each other so as to form a fringe-effect capacitance **99** therebetween as shown in FIG. **18B**. To prevent conduction between the plate ends **97, 98**, the space therebetween is filled with an insulating material **132** as described with respect to FIGS. **14** and **15**; however, as will be appreciated, the use of such a coating is optional and depends on many factors.

Referring to FIGS. **19A** and **19B**, a further example of an integrated capacitor array is represented by the broadband capacitor **100**. The low frequency capacitance section **60** is substantially the same as in other embodiments; however, there are differences in the high frequency capacitance sections **62a, 62b**. In high frequency section **62a**, a pair of conductive electrodes **101, 102** are disposed between an electrode **11** in the low frequency capacitance section **60** and a first floating electrode **104**. That arrangement of electrodes is effective to provide capacitors **105, 106, 107** as shown in FIG. **19B**. Further, as shown in FIG. **19A**, the metallized plates **12, 13** extend over one end of the broadband capacitor **100** and have respective ends **108, 109** sufficiently close to each other so as to form a fringe-effect capacitance **110** therebetween as shown in FIG. **19B**. To prevent conduction between the plate ends **108, 109**, the space therebetween is filled with an insulating material **128** as described with respect to FIGS. **14** and **15**.

In contrast, in the high frequency capacitance section **62b**, a floating electrode **111** is disposed between a pair of electrodes **112, 113** and an electrode **10** in the low frequency capacitance section **60**. That arrangement of plates **111, 112, 113** with the plate **10** provides capacitors **114, 115, 116** as shown in FIG. **20B**. Further, as shown in FIG. **19A**, the metallized plates **12, 13** also extend over an opposite end of the capacitor **100** and have respective ends **117, 118** sufficiently close to each other so as to form a fringe-effect capacitance **119** therebetween as shown in FIG. **19B**. However, in contrast to the capacitance section **62a**, the capacitor design is such that an insulating coating is not required between the plate ends **117, 118**. In addition, the ends **108, 109** of respective contact plates **12, 13** form respective capacitors **135, 136** with the floating plate **104**.

FIGS. **20A, 20B** illustrate a still further embodiment of an integrated capacitor array forming a broadband capacitor **133**. FIGS. **20A, 20B** illustrate an integrated capacitor array that is substantially identical to the previously described capacitor illustrated in FIGS. **10A, 10B** with two exceptions. First, the floating electrode plate **76** present in FIG. **10A** has been eliminated from the embodiment of FIG. **20A**. Second, the metallized plates **72, 74** extending from the respective contacts **13, 12** form a fringe-effect capacitance **79** therebetween. Although small, the fringe-effect capacitance **79** is sufficiently effective at higher frequencies to allow the elimination of the floating plate **76** of FIG. **10A**, thereby reducing the manufacturing cost of the broadband capacitor **133** with respect to the capacitor shown in FIG. **10A**. As will be appreciated, in another embodiment, a capacitor designer may choose to minimize the potential for conduction between ends of the plates **72, 74** by applying an insulating material in the gap between the plates **72, 74** similar to the material **132** of FIG. **14**.

In accordance with the foregoing, an improved capacitive device is formed by integrating low and high frequency performance in a single device. Providing one or more higher frequency, lower value capacitors results in fewer resonances and lower insertion loss amplitudes. With less insertion loss, an improved response can be obtained over a substantial bandwidth, for example, 400 KHz–100 GHz. Further, for a particular application, by building and testing

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capacitive devices using different combinations of the capacitive arrays described herein, a particular size capacitor can be designed to operate over a desired bandwidth.

While the present invention has been illustrated by a description of various embodiments and while these embodiments have been described in considerable detail, it is not the intention of the applicants to restrict or in any way limit the scope of the appended claims to such detail. Additional advantages and modifications will readily appear to those skilled in the art. Specifically, techniques described in these multiple embodiments may be combined in many ways beyond the particular combinations shown herein. For example, the independently adjustable parameters in forming a device in accordance with aspects of the invention include at least the following:

1. the use or not of interior plates **66** and **68** in higher frequency sections **62**,
2. the gap between plates **72** and **74, 66** and **68, 97** and **98, 108** and **109, 117** and **118, 125** and **126, 103** and **131** and the fringe capacitances created thereby,
3. the number of floating plates **76, 90, 104, 111** and their distances from other plates in respective higher frequency sections **62** and adjacent plates in respective lower frequency sections **60**,
4. the width, spacing and overlap characteristics of the floating plates **76, 90, 104, 111**,
5. the extent to which coupling is permitted between non-floating plates in higher frequency sections **62** and adjacent plates in respective lower frequency sections **60**,
6. the use of fringe or face-to-face coupling between floating plates **76, 90, 104, 111** and other plates in respective higher frequency sections **60**,
7. the use of dual or single plates, withdrawn or fully overlapping plates in lower frequency sections **60**, and
8. the relative geometry of external plates **72** and **74** on the device, and the traces **86** on the circuit board to which the device is mounted.

A further potential variable to adjust, is the type of ceramic used. Indeed, different layers in the ceramic structure may be made of ceramic materials having different molecular structures. Different ceramic materials may exhibit different performance in various attributes, such as relative dielectric constant, polarization, breakdown field strength, curing behavior, mechanical strength and mechanical stress and strain behavior. For example, a relatively low dielectric ceramic having relatively good high frequency behavior may be used in the lower section **62** of a device, while a relatively high dielectric ceramic having relatively poorer high frequency behavior may be used in the upper section **60** of the device.

The invention in its broader aspects is therefore not limited to the specific details, representative apparatus and method, and illustrative example shown and described. Accordingly, departures may be made from such details without departing from the spirit or scope of applicant's general inventive concept.

What is claimed is:

1. A capacitor comprising:

- a substantially monolithic dielectric body;
- a conductive first plate disposed within the dielectric body;
- a conductive second plate disposed within the dielectric body and forming a capacitor with the first plate;
- a conductive first contact disposed externally on the dielectric body and electrically connected to the first plate; and

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a conductive second contact disposed externally on the dielectric body and electrically connected to the second plate, and the second contact being located sufficiently close to the first contact to form a first fringe-effect capacitance with the first contact.

2. The capacitor of claim 1 further comprising an insulating layer disposed between the first contact and the second contact on the dielectric body and inhibiting electrical conduction between the first and second contacts.

3. The capacitor of claim 1 wherein the first fringe-effect capacitance is disposed on a first side of the dielectric body and the first contact and the second contact are further disposed on a second side of the dielectric body, and the second contact being located sufficiently close to the first contact on the second side of the dielectric body to form a second fringe-effect capacitance with the first contact.

4. The capacitor of claim 3 further comprising:

a first insulating layer disposed between the first contact and the second contact on the first side of the dielectric body and inhibiting electrical conduction between the first and second contacts; and

a second insulating layer disposed between the first contact and the second contact on the second side of the dielectric body and inhibiting electrical conduction between the first contact and second contact.

5. The capacitor of claim 3 wherein the first side of the dielectric body and the second side of the dielectric body are substantially parallel.

6. The capacitor of claim 1 further comprising conductive first structure disposed within the dielectric body and forming a first capacitor with one of the first and second contacts.

7. The capacitor of claim 6 wherein the conductive first structure forms first and second capacitors with the first and second contacts, respectively.

8. The capacitor of claim 6 wherein the conductive first structure forms a second capacitor with one of the first and second plates.

9. The capacitor of claim 8 wherein the conductive first structure is electrically connected to an other of the first and second plates.

10. The capacitor of claim 1 further comprising:

a conductive first structure disposed within the dielectric body and electrically connected to the first contact, the first structure forming a first capacitor with the first plate; and

a conductive second structure disposed within the dielectric body and electrically connected to the second contact, the second structure forming a second capacitor with the first plate.

11. The capacitor of claim 10 wherein the first structure forms a fringe-effect capacitance with the second structure.

12. The capacitor of claim 11 further comprising a first via of conductive material extending between the first contact and the first structure.

13. The capacitor of claim 12 further comprising a second via of conductive material extending between the second contact and the second structure.

14. The capacitor of claim 13 further comprising a conductive third plate disposed within the dielectric body between the first plate and the first structure and not electrically connected to either the first contact or the second contact, the third plate forming a first capacitor with the first plate and a second capacitor with the first structure.

15. The capacitor of claim 14 wherein the third plate is disposed within the dielectric body between the first plate and the second structure, the third plate forming a third capacitor with the second structure.

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16. The capacitor of claim 1 wherein the dielectric body is ceramic.

17. The capacitor of claim 1 wherein the dielectric body comprises ceramic layers of different molecular structure exhibiting different performance in one or more of relative dielectric constant, breakdown field strength, curing behavior, mechanical strength and mechanical stress and strain behavior.

18. The capacitor of claim 1 wherein the ceramic body comprises a plurality of ceramic tape layers laminated together in a green ceramic state and fired to form a cured monolithic ceramic structure.

19. The capacitor of claim 1 wherein the dielectric body has a hexahedron shape, the first and second external conductive contacts being positioned on opposed end surfaces of the hexahedron shape.

20. The capacitor of claim 1 wherein the third conductive plate is substantially smaller in at least one dimension of its planar surfaces, than the first and second conductive plates.

21. A capacitor comprising:

a substantially monolithic dielectric body;

a conductive first and second plates disposed within the dielectric body and forming a capacitor therebetween; conductive first and second contacts disposed externally on the dielectric body and electrically connected to the first and second plates, respectively; and

a conductive third plate disposed externally on the dielectric body and not electrically connected to either of the first and second contacts, the third plate being located sufficiently close to the first and second contacts to form first and second fringe-effect capacitances with the first and second contacts, respectively.

22. The capacitor of claim 21 wherein the first and second fringe-effect capacitances are serially connected between the first and second contacts.

23. The capacitor of claim 21 further comprising conductive first structure disposed within the dielectric body and forming a first capacitor with one of the first, second and third contacts.

24. The capacitor of claim 23 wherein the conductive first structure forms a second capacitor with one of the first and second plates.

25. The capacitor of claim 24 wherein the conductive first structure is electrically connected to an other of the first and second plates.

26. The capacitor of claim 21 further comprising conductive first structure disposed within the dielectric body and forming first and second capacitors with two of the first, second and third contacts.

27. The capacitor of claim 21 further comprising conductive first structure disposed within the dielectric body and forming first, second and third capacitors with the first, second and third contacts, respectively.

28. A capacitor comprising:

a substantially monolithic dielectric body having a first external surface adapted to be positioned substantially parallel to a major surface of a circuit board; and

a lower frequency, higher value, first capacitor formed by a first plurality of conductive plates disposed within the dielectric body and having respective major surfaces oriented substantially perpendicular to the first external surface, the first plurality of conductive plates forming a plurality of capacitors connected in parallel with each other; and

a higher frequency, lower value, second capacitor formed by a second plurality of conductive plates disposed

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within the dielectric body and having respective major surfaces oriented substantially perpendicular to the first external surface, the second plurality of conductive plates forming the second capacitor connected in parallel with the first capacitor.

29. The capacitor of claim 28 further comprising a higher frequency, lower value, third capacitor formed by a third plurality of conductive plates disposed within the dielectric body and having respective major surfaces oriented substantially perpendicular to the first external surface, the third plurality of conductive plates forming the third capacitor connected in parallel with the first capacitor and the second capacitor.

30. A capacitor comprising:

a substantially monolithic dielectric body having a longitudinal centerline adapted to extend in a direction substantially parallel to a major surface of a circuit board;

first conductive plates disposed within the dielectric body and having respective major surfaces oriented substantially perpendicular to the longitudinal centerline, the first conductive plates forming at least one lower frequency, higher valued, multilayer capacitor; and

second conductive plates disposed within the dielectric body and having respective major surfaces oriented substantially perpendicular to the longitudinal centerline, the second conductive plates forming at least one higher frequency, lower valued, single layer capacitor.

31. The capacitor of claim 30 wherein the multilayer capacitor and the single layer capacitor are connected in parallel with each other.

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32. A capacitor comprising:

a substantially monolithic dielectric body having a first external surface adapted to be positioned substantially parallel to a major surface of a circuit board;

a conductive first plate disposed within the dielectric body at an orientation substantially perpendicular to the first external surface;

a conductive second plate disposed within the dielectric body at an orientation substantially perpendicular to the first external surface and forming a capacitor with the first plate;

a conductive first contact disposed externally on the dielectric body and electrically connected to the first plate;

a conductive second contact disposed externally on the dielectric body and electrically connected to the second plate;

a conductive third plate disposed within the dielectric body at an orientation substantially perpendicular to the first external surface, the third plate not being connected to either the first contact or the second contact, the third plate being located in the dielectric body to form a first capacitor with one of the first plate and the second plate; and

a conductive fourth plate disposed within the dielectric body at an orientation substantially perpendicular to the first external surface, the fourth plate being connected to one of the first contact and the second contact and forming a second capacitor with the third plate.

33. The capacitor of claim 32 wherein the first capacitor is a lower frequency, higher valued capacitor.

34. The capacitor of claim 32 wherein the second capacitor is a higher frequency, lowered valued capacitor.

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(12) **EX PARTE REEXAMINATION CERTIFICATE** (8534th)
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Devoe et al. (10) **Number:** **US 6,816,356 C1**
(45) Certificate Issued: **Sep. 13, 2011**

(54) **INTEGRATED BROADBAND CERAMIC CAPACITOR ARRAY**

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(52) **U.S. Cl.** **361/309; 361/303; 361/311**

(58) **Field of Classification Search** None
 See application file for complete search history.

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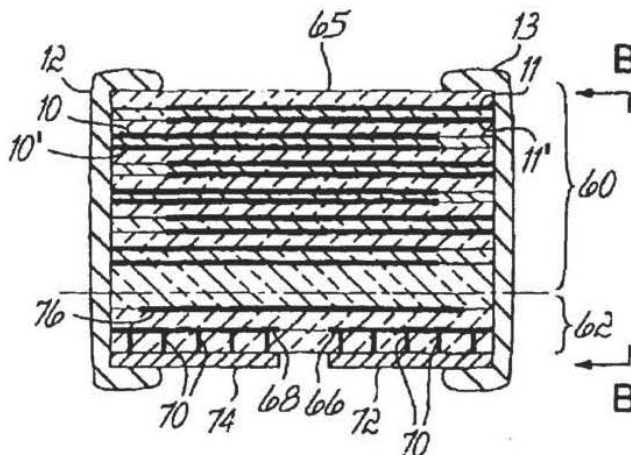
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(57) **ABSTRACT**

A monolithic capacitor structure includes opposed and overlapping plates within a dielectric body, which are arranged to form a lower frequency, higher value capacitor. Other conductive structure is located either inside the dielectric body or on an external surface thereof and is effective to form a higher frequency, lower value capacitor in parallel with the lower frequency, higher value capacitor. The resulting array of combined series and parallel capacitors integral with the dielectric body provides effective wideband performance in an integrated, cost-effective structure.



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EX PARTE
REEXAMINATION CERTIFICATE
ISSUED UNDER 35 U.S.C. 307

THE PATENT IS HEREBY AMENDED AS
INDICATED BELOW.

Matter enclosed in heavy brackets [] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

The patentability of claims 1-5, 16, 18 and 19 is confirmed.

New claims 35-54 are added and determined to be patentable.

Claims 6-15, 17, and 20-34 were not reexamined.

35. A capacitor comprising:

a substantially monolithic dielectric body comprising a plurality of layers laminated together and fired into a structure;

a conductive first plate disposed within the dielectric body;

a conductive second plate disposed within the dielectric body in a location parallel and opposed to said first plate and forming a capacitor with the first plate;

a conductive first contact disposed externally on the dielectric body and electrically connected to the first plate; and

a conductive second contact disposed externally on the dielectric body and electrically connected to the second plate, and the second contact being located sufficiently close to the first contact to form a first fringe-effect capacitance with the first contact.

36. The capacitor of claim 35 further comprising an insulating layer disposed between the first contact and the second contact on the dielectric body and inhibiting electrical conduction between the first and second contacts.

37. The capacitor of claim 35 wherein the first fringe-effect capacitance is disposed on a first side of the dielectric body and the first contact and the second contact are further disposed on a second side of the dielectric body, and the second contact being located sufficiently close to the first contact on the second side of the dielectric body to form a second fringe-effect capacitance with the first contact.

38. The capacitor of claim 37 further comprising:

a first insulating layer disposed between the first contact and the second contact on the first side of the dielectric body and inhibiting electrical conduction between the first and second contacts; and

a second insulating layer disposed between the first contact and the second contact on the second side of the dielectric body and inhibiting electrical conduction between the first contact and second contact.

39. The capacitor of claim 37 wherein the first side of the dielectric body and the second side of the dielectric body are substantially parallel.

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40. The capacitor of claim 35 further comprising conductive first structure disposed within the dielectric body and forming a first capacitor with one of the first and second contacts.

41. The capacitor of claim 40 wherein the conductive first structure forms first and second capacitors with the first and second contacts, respectively.

42. The capacitor of claim 40 wherein the conductive first structure forms a second capacitor with one of the first and second plates.

43. The capacitor of claim 42 wherein the conductive first structure is electrically connected to an other of the first and second plates.

44. The capacitor of claim 35 further comprising:

a conductive first structure disposed within the dielectric body and electrically connected to the first contact, the first structure forming a first capacitor with the first plate; and

a conductive second structure disposed within the dielectric body and electrically connected to the second contact, the second structure forming a second capacitor with the first plate.

45. The capacitor of claim 44 wherein the first structure forms a fringe-effect capacitance with the second structure.

46. The capacitor of claim 45 further comprising a first via of conductive material extending between the first contact and the first structure.

47. The capacitor of claim 46 further comprising a second via of conductive material extending between the second contact and the second structure.

48. The capacitor of claim 47 further comprising a conductive third plate disposed within the dielectric body between the first plate and the first structure and not electrically connected to either the first contact or the second contact, the third plate forming a first capacitor with the first plate and a second capacitor with the first structure.

49. The capacitor of claim 48 wherein the third plate is disposed within the dielectric body between the first plate and the second structure, the third plate forming a third capacitor with the second structure.

50. The capacitor of claim 35 wherein the dielectric body is ceramic.

51. The capacitor of claim 35 wherein the dielectric body comprises ceramic layers of different molecular structure exhibiting different performance in one or more of relative dielectric constant, breakdown field strength, curing behavior, mechanical strength and mechanical stress and strain behavior.

52. The capacitor of claim 35 wherein the ceramic body comprises a plurality of ceramic tape layers laminated together in a green ceramic state and fired to form a cured monolithic ceramic structure.

53. The capacitor of claim 35 wherein the dielectric body has a hexahedron shape, the first and second external conductive contacts being positioned on opposed end surfaces of the hexahedron shape.

54. The capacitor of claim 35 wherein the third conductive plate is substantially smaller in at least one dimension of its planar surfaces, than the first and second conductive plates.

* * * * *



US006816356C2

(12) **EX PARTE REEXAMINATION CERTIFICATE** (10775th)**United States Patent****Devoe et al.**(10) **Number:** **US 6,816,356 C2**(45) **Certificate Issued:** **Dec. 8, 2015**(54) **INTEGRATED BROADBAND CERAMIC CAPACITOR ARRAY**(75) Inventors: **Daniel Devoe**, San Diego, CA (US);
Alan Devoe, La Jolla, CA (US);
Lambert Devoe, San Diego, CA (US)(73) Assignee: **PRESIDIO COMPONENTS, INC.**,
San Diego, CA (US)**Reexamination Request:**

No. 90/013,421, Dec. 30, 2014

Reexamination Certificate for:Patent No.: **6,816,356**
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Appl. No.: **10/412,992**
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Related U.S. Application Data(63) Continuation-in-part of application No. 10/150,202,
filed on May 17, 2002, now Pat. No. 6,587,327.(51) **Int. Cl.****H01G 9/042** (2006.01)
H01G 9/045 (2006.01)
H01G 4/32 (2006.01)
H01G 4/228 (2006.01)
H01G 4/232 (2006.01)**H01G 4/30** (2006.01)**H01G 4/40** (2006.01)**H01G 4/38** (2006.01)(52) **U.S. Cl.**CPC **H01G 4/228** (2013.01); **H01G 4/232**
(2013.01); **H01G 4/30** (2013.01); **H01G 4/38**
(2013.01); **H01G 4/40** (2013.01)(58) **Field of Classification Search**

None

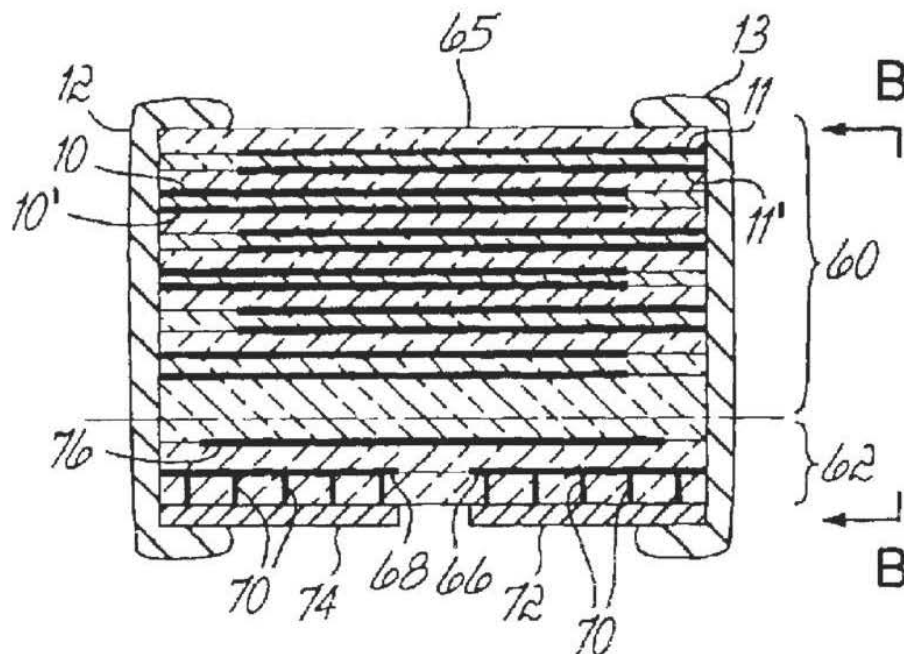
See application file for complete search history.

(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/013,421, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Luke S Wassum(57) **ABSTRACT**

A monolithic capacitor structure includes opposed and overlapping plates within a dielectric body, which are arranged to form a lower frequency, higher value capacitor. Other conductive structure is located either inside the dielectric body or on an external surface thereof and is effective to form a higher frequency, lower value capacitor in parallel with the lower frequency, higher value capacitor. The resulting array of combined series and parallel capacitors integral with the dielectric body provides effective wideband performance in an integrated, cost-effective structure.



US 6,816,356 C2

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EX PARTE

REEXAMINATION CERTIFICATE

THE PATENT IS HEREBY AMENDED AS
INDICATED BELOW.

Matter enclosed in heavy brackets [] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN
DETERMINED THAT:

Claims 1, 3, 35 and 37 are determined to be patentable as amended.

Claims 5, 16, 18, 19, 39, 50, 52 and 53, dependent on an amended claim, are determined to be patentable.

Claims 2, 4, 6-15, 17, 20-34, 36, 38, 40-49, 51 and 54 were not reexamined.

1. A capacitor comprising:

a substantially monolithic dielectric body;
a conductive first plate disposed within the dielectric body;
a conductive second plate disposed within the dielectric body and forming a capacitor with the first plate;
a conductive first contact disposed externally on the dielectric body and electrically connected to the first plate; and
a conductive second contact disposed externally on the dielectric body and electrically connected to the second plate, and the second contact being located sufficiently close to the first contact *in an edge to edge relationship in such proximity as to form a first fringe-effect capacitance with the first contact that is capable of being determined by measurement in terms of a standard unit.*

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3. The capacitor of claim 1 wherein the first fringe-effect capacitance is disposed on a first side of the dielectric body and the first contact and the second contact are further disposed on a second side of the dielectric body, and the second contact being located sufficiently close to the first contact *in an edge to edge relationship in such proximity as to form a second fringe-effect capacitance with the first contact that is capable of being determined by measurement in terms of a standard unit.*

35. A capacitor comprising:

a substantially monolithic dielectric body comprising a plurality of layers laminated together and fired into a structure;
a conductive first plate disposed within the dielectric body;
a conductive second plate disposed within the dielectric body in a location parallel and opposed to said first plate and forming a capacitor with the first plate;
a conductive first contact disposed externally on the dielectric body and electrically connected to the first plate; and
a conductive second contact disposed externally on the dielectric body and electrically connected to the second plate, and the second contact being located sufficiently close to the first contact *in an edge to edge relationship in such proximity as to form a first fringe-effect capacitance with the first contact that is capable of being determined by measurement in terms of a standard unit.*

37. The capacitor of claim 35 wherein the first fringe-effect capacitance is disposed on a first side of the dielectric body and the first contact and the second contact are further disposed on a second side of the dielectric body, and the second contact being located sufficiently close to the first contact on the second side of the dielectric body *in an edge to edge relationship in such proximity as to form a second fringe-effect capacitance with the first contact that is capable of being determined by measurement in terms of a standard unit.*

* * * * *

**United States Court of Appeals
for the Federal Circuit**

Presidio Components, Inc. v. American Technical Ceramics, 2016-2607, -2650

CERTIFICATE OF SERVICE

I, Robyn Cocho, being duly sworn according to law and being over the age of 18, upon my oath depose and say that:

Counsel Press was retained by NUTTER MCCLENNEN & FISH LLP, counsel for Appellant to print this document. I am an employee of Counsel Press.

On **November 8, 2016** counsel has authorized me to electronically file the foregoing **Brief for Defendant-Appellant** with the Clerk of Court using the CM/ECF System, which will serve via e-mail notice of such filing to all counsel registered as CM/ECF users, including the following principal counsel:

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Paper copies will also be mailed to the above principal counsel at the time paper copies are sent to the Court.

Upon acceptance by the Court of the e-filed document, six paper copies will be filed with the Court within the time provided in the Court's rules.

November 8, 2016

/s/ Robyn Cocho
Counsel Press

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November 8, 2016

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